

**EPA Superfund
Record of Decision:**

**ROSEN BROTHERS SCRAP YARD/DUMP
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CORTLAND, NY
03/23/1998**

RECORD OF DECISION

Rosen Brothers Site
Cortland, New York

U.S. Environmental Protection Agency
Region II
New York, New York
March 1998

DECLARATION FOR RECORD OF DECISION

SITE NAME AND LOCATION

Rosen Brothers Site, Cortland, New York

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for the Rosen Brothers Superfund Site (the "Site") in accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601-9675, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300. This decision document explains the factual and legal basis for selecting the remedy for the Site. The attached index (Appendix III) identifies the items that comprise the Administrative Record upon which the selection of the remedial action is based.

The New York State Department of Environmental Conservation (NYSDEC) was consulted on the proposed remedial action in accordance with CERCLA §121(f), 42 U.S.C. §9621(f), and it concurs with the selected remedy (see Appendix IV).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Rosen Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedy include the following:

- Excavation of all 1,1,1-trichloroethane (TCA)-contaminated soils above 1 milligram per kilogram (mg/kg) in two hot spot areas (one immediately downgradient of the former cooling pond in the monitoring well W-06 area and the other corresponding with test pit T-02) and PCB-contaminated soils above 10 mg/kg in two hot spot areas (the northeast portion of the Site and the area of the gantry

crane in the central portion)¹. The actual extent of the excavations and the volume of the excavated material will be based on post-excavation confirmatory sampling. Clean or treated material will be used as backfill in the excavated areas.

- Consolidation of all excavated soils with PCB concentrations less than 50 mg/kg onto the former cooling pond. Those soils with PCB concentrations above 50 mg/kg will be sent off-site for treatment/disposal at a Toxic Substances Control Act (TSCA)-compliant facility. All excavated TCA-contaminated soils will either be sent off-site for treatment/disposal or treated on-site to 1 mg/kg for TCA and used as backfill in the excavations.
- Removal and consolidation onto the former cooling pond of non-hazardous debris located on surface areas where the site-wide surface cover will be installed and/or is commingled with the excavated soil.
- Placement of a cap meeting the requirements of New York State 6 NYCRR Part 360 regulations over the three-acre former cooling pond. Prior to the construction of the cap, the consolidated soils, non-hazardous debris, and existing fill materials will be regraded and compacted to provide a stable foundation and to promote runoff.
- Construction of a chain-link fence around the former cooling pond after it is capped.
- Placement of a surface cover over the remaining areas of the Site to prevent direct contact with residual levels of contaminants in Site soils. The nature of the surface cover will be determined during the remedial design phase.
- Monitored natural attenuation to address the residual groundwater contamination in downgradient areas. As part of a long-term groundwater monitoring program, sampling will be conducted in order to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment.

¹ See Figure 3 for locations of the areas to be remediated.

- Implementation of regrading and storm-water management improvements to protect the integrity of the cap/surface cover.
- Employment of dust and VOC control/suppression measures during all construction and excavation activities, as necessary, pursuant to state and federal guidance.
- Long-term monitoring to evaluate the remedy's effectiveness. The exact frequency, location, and parameters of groundwater monitoring will be determined during remedial design. Monitoring will include a network of groundwater monitoring wells, including the installation of new monitoring wells (as necessary). Monitoring will also include several sediment sampling stations.
- Taking steps to secure institutional controls, such as deed restrictions and contractual agreements, as well as local ordinances, laws, or other government action, for the purpose of, among other things, restricting the installation and use of groundwater wells at and downgradient of the Site, restricting excavation or other activities which could affect the integrity of the cap/site-wide surface cover, and restricting residential use of the property in order to reduce potential exposure to site-related contaminants.
- Reevaluation of Site conditions at least once every five years to determine if a modification to the selected alternative is necessary.

It is anticipated that excavation of the two PCB hot spot areas and the installation of the site-wide surface cover on a portion of the Site will be performed pursuant to a Unilateral Administrative Order issued by EPA in early March 1998.

Data indicate that the groundwater contamination in the monitoring well W-06 area is of an intermittent nature and that TCA levels in groundwater along the Site's downgradient perimeter are present at relatively low levels. These conditions, combined with the removal of the TCA source areas, extremely high groundwater flow, and the presence of intrinsic conditions favorable to contaminant degradation, is expected to lead to the timely groundwater restoration via monitored natural attenuation (in approximately 10 years) without relying on a costly groundwater extraction and treatment system.

If, however, monitored natural attenuation does not appear to be successful in remediating the groundwater, then more active remedial measures would be considered. EPA may also invoke a waiver of groundwater Applicable or Relevant and Appropriate Requirements (ARARs) if the remediation program and further monitoring data indicate that reaching Maximum Contaminant Levels (MCLs) in the aquifer is technically impracticable.

The selected alternative will provide the best balance of trade-offs among alternatives with respect to the evaluating criteria. EPA and NYSDEC believe that the selected alternative will be protective of human health and the environment, will comply with ARARs, will be cost-effective, and will utilize permanent solutions to the maximum extent practicable.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in CERCLA §121, 42 U.S.C. §9621 in that it: (1) is protective of human health and the environment; (2) attains a level or standard of control of the hazardous substances, pollutants and contaminants, which at least attains the legally applicable or relevant and appropriate requirements under federal and state laws; (3) is cost-effective; (4) utilizes alternative treatment (or resource recovery) technologies to the maximum extent practicable; and (5) satisfies the statutory preference for remedies that employ treatment to reduce the toxicity, mobility, or volume of the hazardous substances, pollutants or contaminants at a site.

Because this remedy will result in contaminants remaining on the Site above health-based limits until the contaminant levels in the aquifer are reduced below MCLs, a review of the remedial action, pursuant to CERCLA §121(c), 42 U.S.C. §9621(c), will be conducted five years after the commencement of the remedial action and every five years thereafter, to ensure that the remedy continues to provide adequate protection to human health and the environment.

DECISION SUMMARY

Rosen Brothers Site
Cortland, New York

U.S. Environmental Protection Agency
Region II
New York, New York

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SITE LOCATION AND DESCRIPTION

The Rosen Brothers Site (the Site), located on relatively flat terrain, is an abandoned scrap-metal processing facility which occupies approximately 20 acres on the southern side of the City of Cortland, New York (see Figure 1). Access to the Site is restricted from the surrounding environs by a seven-foot-high fence with two locked gates. To the east of the Site is the building and parking lot of the former Kirby Company, Pendleton Street, a vacant lot, a small residential area consisting of approximately 13 apartment buildings, and GT Auto Finishers. To the north is Perplexity Creek (an eastward flowing, seasonally intermittent stream), railroad tracks associated with the New York, Susquehanna & Western Railroad, several industries (Acorn Products, Tuscarora Plastics, and Marietta Packaging), Huntington Street, a small residential area consisting of approximately 20 houses, and the Randall Elementary School. To the west is a vacant lot, several industries (GS Heavy Duty Electric, JTS Lumber, and Cortland Wholesale Lumber and Plywood), and South Main Street. To the south is Perplexity Creek Tributary, a former City of Cortland dump site, Valley View Drive, and the Cortland City Junior and Senior High Schools (see Figure 2).

Perplexity Creek Tributary, which flows northeast, converges with Perplexity Creek at the northeast corner of the Site. Both are seasonally intermittent streams. At this point, Perplexity Creek continues through a culvert for approximately 2,000 feet, then flows freely for approximately a one-half mile interval before emptying into the Tioughnioga River. Surficial geology at the Site (hereinafter referred to as overburden) is comprised of glacial sand and gravel overlain by a silt unit and a fill unit. The silt unit appears to overlay the sand and gravel unit across most of the Site, ranging from two to six feet in thickness. For most of the Site, the fill ranges in thickness from one to six feet, typically consisting of gravels, sands, and silts mixed with various materials such as slag, cinders, and ash. Other materials observed in the fill consist of metal, wire, brick, wood, glass, railroad ties, pipes, tar, plastics, and concrete. Construction and, to a lesser extent, municipal wastes, ranging from four to twenty-five feet in thickness, are present in a three-acre former cooling pond. The eastern portion of the cooling pond has been filled in to an

estimated fifteen feet above grade.

The Site overlies the Cortland-Homer-Preble aquifer, a sole source aquifer used as a supply of potable water for the City of Cortland. The potable water supply well for the entire City is located approximately two miles upgradient of the Site. Officials from both the City of Cortland and Cortland County have indicated that there are no known users of groundwater in areas downgradient of the Site.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The area currently occupied by the Site is the eastern half of a forty-acre parcel of land which was originally referred to as "Randall's Vacant Fields." In the late 1800's, the forty-acre parcel was developed by Wickwire Brothers, Inc. (Wickwire) as an industrial facility for the manufacture of wire, wire products, insect screens, poultry netting, and nails. The eastern half of the property was used, primarily, as a scrap yard by Wickwire, supplying scrap metal for the steel mill. An on-site pond was dammed and used as a cooling pond in the manufacture of raw steel. This pond was approximately three acres in size and had an estimated capacity of one million gallons. The entire facility was sold to Keystone Consolidated Industries, Inc. (Keystone) in 1968. Keystone closed the facility in 1971. Shortly thereafter, the facility was destroyed by fire.

In the early 1970's, Phillip and Harvey Rosen (Rosen Brothers) transferred their existing scrap-metal processing operation to the eastern portion of the property. At this time, Rosen Brothers began the demolition of the Wickwire buildings on the western portion of the property. The demolition debris (allegedly over a million and a half square feet of buildings) was used to fill in most of the cooling pond to or above grade, hence the cooling pond is hereinafter referred to as "the former cooling pond". In exchange for this work, Rosen Brothers was granted title to the eastern portion of the property. The western portion of the Wickwire property was cleared for the development of new industry in 1979, and has since been known as the Noss Industrial Park.

Rosen Brothers' scrap metal operations included scrap metal processing and automobile crushing. The Site was used to stage large quantities of abandoned vehicles, appliances, steel tanks, drums, truck bodies, and other scrap materials. Municipal waste, industrial waste, and construction waste were allegedly intermittently disposed of in or on the former cooling pond. Drums were routinely crushed on-site, the contents spilling onto the ground surface. Philip Rosen and Rosen Brothers were cited for various violations throughout this period, including illegally dumping into Perplexity Creek Tributary, improperly disposing of waste materials, and operating a refuse disposal area without a permit. Operations on the Site ceased in 1985 and the Site was abandoned.

In 1986, NYSDEC conducted a Phase II investigation, which included a site inspection, geophysical studies, installation of soil borings and monitoring wells, and sampling and analysis of groundwater, soils,

sediments, and waste materials. The site inspection concluded that hazardous materials were present on the Site, including several hundred full and/or leaking drums, transformers filled with polychlorinated biphenyls (PCBs), and pressurized cylinders of unknown content. The

results of sampling efforts indicated elevated levels of trichloroethane (TCA), PCBs, anthracene, pyrene, lead, and chromium, in Site soil, sediment, and groundwater.

EPA performed a removal action at the Site in 1987 to address immediate threats to the public health and the environment. This removal action included fencing the Site, sampling, excavating visibly-contaminated soil, and securing and temporary staging of drums, tanks, cylinders, transformers, and the excavated soil.

Based on materials observed on the Site and other evidence, EPA issued Administrative Orders to Keystone and several additional potentially responsible parties in 1988 and 1989, namely Monarch Machine Tool Company (Monarch), Niagara Mohawk Power Corporation (Niagara Mohawk), and the Dallas Corporation (later called Overhead Door Corporation and hereinafter referred to as Overhead Door), requiring them to remove the materials previously staged by EPA. This work was completed in April 1990.

On March 30, 1989, the Site was added to the Superfund National Priorities List. Overhead Door, Monarch, and Niagara Mohawk agreed to conduct a remedial investigation/feasibility study (RI/FS) in accordance with an Administrative Order on Consent (Index Number II CERCLA 00204) with EPA in January 1990. Keystone, Cooper Industries, Inc., and Potter Paint Co., Inc. assisted in the performance or funding of the RI/FS pursuant to the terms of a Unilateral Administrative Order (index Number II CERCLA-00205) issued in February 1990. The companies completed the RI/FS in 1997. On March 6, 1998, EPA issued a Unilateral Administrative Order to the companies noted above and several other entities to perform a removal action in anticipation of planned on-site redevelopment activities.

These companies voluntarily undertook the demolition and removal of structurally unsound buildings and a 150-foot high smoke stack in December 1992. They also removed and recycled 200 tons of scrap materials in December 1993. In November 1994, the companies emptied and disposed of the contents of an abandoned underground storage tank and removed a small concrete oil pit. In August 1997, EPA removed and

recycled over 500 tons of scrap metal and more than 20 tons of tires from the Site.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI report, dated May 1994, which describes the nature and extent of the contamination at and emanating from the Site, the Risk Assessment, dated January 1995, which discusses the risks associated with the Site, the FS report, dated April 1997, which identifies and evaluates various remedial alternatives, and the November 1997 Proposed Plan were made available to the public in both the Administrative Record and information repositories maintained at the EPA Docket Room in the Region II New York City office and at the City of Cortland Public Library located at 32 Church Street, Cortland, New York. The notice of availability for these documents was published in the Cortland Standard on November 17, 1997. A public comment period was held from November 17 through January 16, 1998. A public meeting was held on December 9, 1997 at the New York State Grange Building in Cortland, New York. At this meeting, representatives from EPA presented the findings of the RI/FS and answered questions from the public about the Site and the remedial

alternatives under consideration.

Responses to the comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix V).

SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION

The primary objectives of this action, the first and only remedial action planned for the Site, are to address contaminated soils and groundwater and to minimize any potential future health and environmental impacts.

SUMMARY OF SITE CHARACTERISTICS

During the RI, air, surface water, sediments, surface soils, subsurface soils, and groundwater were sampled. The results from these samples are summarized below.

- 1 A thirty-day extension of the comment period was granted.

Air

Five air samples were collected downwind of the Site and analyzed for VOCs. In addition, potential concentrations of constituents on dust particulates were evaluated. The results did not indicate any significant site-related impacts to air quality.

Surface Water

Contaminant levels in the surface water were found to be generally insignificant.

Sediments

Although semi-volatile organic compounds (SVOCs), PCBs, and metals were detected in sediments, they were present at levels that do not represent a significant impact.

Surface Soil

Surface soils were sampled for SVOCs and metals at forty-three locations. PCB samples were collected at thirty-one locations. SVOCs were generally detected at low to moderate levels at almost every location sampled. Surface soil sampling data are included in Table 1. The SVOCs that were detected were predominantly polyaromatic hydrocarbons (PAHs) and phthalates. The highest concentrations (up to 2,300 milligram/kilogram (mg/kg) of total SVOCs) were detected in surface soil samples in the vicinity of the former cooling pond. Four PAHs, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene, were detected wherever SVOCs were present. The PAH compounds are believed to be associated with petroleum products, coal, and combustion byproducts from both Wickwire and Rosen Brothers operations. The phthalates are typically associated with plastic materials.

Elevated concentrations of metals were detected in multiple locations across the Site, including cadmium, chromium, lead, manganese, mercury, and zinc. Elevated metal concentrations include manganese at approximately 19,100 mg/kg and lead at approximately 3,000 mg/kg.

Surface-soil samples collected in the northeast portion of the Site contained PCBs with concentrations exceeding 25 mg/kg. PCB sampling data from this event are included in Table 2. PCBs were detected

sporadically and at low levels (generally less than 1 mg/kg) in other areas of the Site, including an area where an overhead Gantry crane operated to load and unload scrap during both Wickwire and Rosen Brothers operations.

Subsurface Soil

Samples from twenty-one subsurface-soil locations were collected from test pits and borings. These samples were analyzed for volatile organic compounds (VOCs), SVOCs, PCBs/pesticides, and metals. Subsurface soil sampling data are included in Table 3. VOCs were generally detected at relatively low concentrations (i.e., below 1 mg/kg), with the exception of TCA at 44 mg/kg in a single location, two to three feet below the surface in the south-central portion of the Site (i.e., sample collected from test pit T-02). Most of the SVOCs detected in subsurface soil samples collected at the Site were PAHs. Total SVOC concentrations were generally low across the Site (i.e., below 1 mg/kg). The highest concentration detected was approximately 330 mg/kg in the northeastern portion of the Site. Consistent with surface soil sampling data, PCBs in subsurface soil samples were generally confined to the northeastern area of the Site, at concentrations exceeding 25 mg/kg. Pesticides were either not detected or present at extremely low levels. Metals in subsurface soils were generally detected at levels well below those detected in surface soils. The maximum concentrations of manganese and lead were detected at approximately 8,000 mg/kg and 1,100 mg/kg, respectively.

A suspected area of subsurface drum disposal in the southwestern portion of the Site was investigated by test pitting during the RI in 1993. No drums were located during this effort. In addition, a geophysical testing program was conducted in 1996 to explore discrete subsurface areas of the Site where drum disposal was suspected. Using several remote sensing technologies, suspected areas were defined, including three locations within the former cooling pond. A test-pitting program did not locate any drums.

Groundwater

There are two primary hydrogeologic units beneath the Site -- the upper outwash unit and the lower sand and gravel unit. In the southern portion of the Site, the upper unit directly overlies the lower unit and they tend to act as one unit. In the northern portion of the Site, the upper outwash and lower sand and gravel units become separated by a lower permeability lacustrine unit, forming two distinct hydrogeologic units. The

lacustrine unit also restricts the downward migration of contaminants from the upper outwash unit to the lower sand and gravel unit. The upper outwash unit is about 40 feet thick and the general direction of groundwater flow is toward the northeast (see Figure 3).

During the RI, several groundwater sampling events were conducted using twenty-four monitoring wells. Samples were analyzed for VOCs, SVOCs, PCBs/pesticides, and metals. Groundwater sampling data are

included in Table 4. The results of these RI sampling activities indicated the presence of elevated levels of VOCs in the groundwater beneath the Site. The primary groundwater contaminants were determined to be TCA and its degradation products, 1,1-dichloroethane (1,1-DCA) and 1,1-dichloroethene (1,1-DCE). The highest concentrations of contaminants were detected in the south-central portion of the Site, in monitoring well W-06, located immediately downgradient of the former cooling pond. A concentration of 3,400 micrograms per liter ($\mu\text{g/l}$) of TCA was detected in this well. Subsequent groundwater monitoring over the next several years showed a significant decline of TCA concentrations. Much lower concentrations of these and other VOCs were detected at wells throughout the Site, downgradient of the Site, and to a lesser extent, upgradient of the Site. The data indicate that there is a general decline in groundwater contaminant levels in seven upper outwash wells along the northern (downgradient) perimeter of the Site. The highest concentrations were detected in the central portion of the northern perimeter, located hydraulically downgradient of monitoring well W-06 and test pit T-02, with a high concentration of 390 $\mu\text{g/l}$ detected in February 1992. By March 1996, the last full round of groundwater sampling conducted, the high concentration had declined to 88 $\mu\text{g/l}$. Consistent with the northern-perimeter wells, the data indicate that there is a general decline in groundwater contaminant levels in four off-site, upper-outwash wells located downgradient of the northern-perimeter wells. Average TCA concentrations ranged from 8 $\mu\text{g/l}$ to 135 $\mu\text{g/l}$. The highest concentrations were detected hydraulically downgradient of monitoring well W-11 (see Figure 2), with a high concentration of 260 $\mu\text{g/l}$, detected in February 1992, which declined to 83 $\mu\text{g/l}$ by March 1996.

Post-RI quarterly groundwater samples were collected from April 1995 through August 1996 to assess the nature and degree of decline in the levels of TCA immediately downgradient of the former cooling pond. A summary of all groundwater sampling data for TCA is included in Table 5. Levels of TCA continued to decline until December 1995, when an elevated level of 5,000 $\mu\text{g/l}$ was observed. The conclusion drawn from these data was that there was an intermittent source of TCA present in

the soils/fill in the vicinity of or upgradient from monitoring well W-06 (See Figure 4).

In response, EPA conducted an investigation in the vicinity of monitoring well W-06 and the former cooling pond. Groundwater, soil, and soil gas samples were collected and test pits were excavated into the former cooling pond and in the monitoring well W-06 area in an attempt to identify the source of the intermittent TCA contamination. The data collected led to the conclusion that there was a localized source of TCA in the soils/fill in the monitoring well W-06 area and that the former cooling pond was not a source of TCA. The estimated volume of contaminated soil in the monitoring well W-06 area is 500 to 1,000 cubic yards, based on elevated soil concentrations from four to eight feet deep overlying the silt unit. A similar volume is assumed to be present in the test pit T-02 area.

PCBs were detected in groundwater in a single well in the northeastern portion of the Site. The highest concentration reported was 11 $\mu\text{g/l}$. The PCBs at this location can be correlated directly with the PCBs detected in the soil in the vicinity of this well. No PCBs were detected in nearby downgradient monitoring wells. Pesticides were not detected in the groundwater.

The data indicate that elevated levels of metals are present in the groundwater. Metals with elevated concentrations include antimony, arsenic, cadmium, lead, chromium, and manganese. Manganese was often detected above 5,000 µg/l in unfiltered samples and above 1,000 µg/l in filtered samples. While it is difficult to correlate these groundwater contaminants solely with the Site, it appears that the Site does contribute to the presence of metals in groundwater.

Overall, data from on- and off-site monitoring wells indicate a narrow, relatively low-level and stable groundwater-contaminant plume migrating from the Site to the northeast and extending almost to the Tioughnioga River. The groundwater data indicate that contaminants are confined to the upper outwash unit and have not migrated to the lower sand and gravel unit. This is likely due to both the extremely high horizontal groundwater flow velocity in the Cortland aquifer as well as to the presence of the less-permeable lacustrine unit between the upper outwash and lower sand and gravel units across the northern portion of the Site. The data collected, including the collection of data confirming the presence of conditions favorable for natural attenuation, indicate that there continues to be a general decline in the levels of contaminants over

time downgradient of the source areas (i.e., at the northern perimeter and areas downgradient of the Site).

Pump testing conducted after the RI concluded that a flow rate of 1,000 to 1,500 gallons per minute would be necessary to create a hydraulic barrier along the downgradient edge of the Site in order to prevent contaminated groundwater from leaving the Site.

SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future Site conditions. The baseline risk assessment estimates the human health and ecological risk which could result from the contamination at the Site, if no remedial action were taken.

Human Health Risk Assessment

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario: Hazard Identification--identifies the contaminants of concern at the Site based on several factors such as toxicity, frequency of occurrence, and concentration. Exposure Assessment--estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed. Toxicity Assessment--determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response). Risk Characterization--summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks.

The baseline risk assessment began with selecting contaminants of concern which would be representative of Site risks. Contaminants were identified based on factors such as potential for exposure to receptors, toxicity, concentration, and frequency of occurrence. Contaminants of concern are presented in Table 6. Several of the SVOCs (particularly the PAHs), as well as the PCBs, are known to cause cancer in laboratory

animals and are suspected or known to be human carcinogens. Many of the metals, particularly manganese, are noncarcinogenic compounds with strong potential for adverse health effects.

The baseline risk assessment evaluated the health effects which could result from exposure to contaminated Site media (i.e., soil, groundwater, etc.) through ingestion, dermal contact, or inhalation. The assessment evaluated risks to potential trespassers, potential future off-site residents, potential future excavation workers, and potential future industrial workers. Exposure routes are presented in Table 7.

Noncarcinogenic risks were assessed using a Hazard Index (HI) approach, based on a comparison of expected contaminant intakes and safe levels of intake (Reference Doses or RfDs). RfDs have been developed by EPA for indicating the potential for adverse health effects. RfDs, which are expressed in units of mg/kg-day, are estimates of daily exposure levels for humans which are thought to be safe over a lifetime (including sensitive individuals). Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical ingested from contaminated drinking water) are compared with the RfD to derive the hazard quotient for the contaminant in the particular medium. The hazard index is obtained by adding the hazard quotients for all compounds across all media that impact a particular receptor population. The RfDs for the compounds of concern are presented in Table 8.

Potential carcinogenic risks were evaluated using the cancer slope factors developed by EPA for the contaminants of concern. Cancer slope factors (SFs) have been developed by EPA's Carcinogenic Risk Assessment Verification Endeavor for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. SFs, which are expressed in units of (mg/kg-day)⁻¹, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to generate an upper-bound estimate of the excess lifetime cancer risk associated with exposure to the compound at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes the underestimation of the risk highly unlikely. The SFs for the compounds of concern are presented in Table 9.

Current federal guidelines for acceptable exposures are an individual lifetime excess carcinogenic risk in the range of 10^{-4} to 10^{-6} (e. g., a one-in-ten-thousand to a one-in-a-million excess cancer risk) and a maximum health HI (which reflects noncarcinogenic effects for a human receptor) equal to 1.0. A HI greater than 1.0 indicates a potential of noncarcinogenic health effects.

The results of the baseline risk assessment indicate that the contaminated surface soils and groundwater at the Site pose an unacceptable risk to human health due, primarily, to the presence of VOCs, SVOCs, PCBs, and metals. HI data are summarized in Table 10. Cancer risk data are summarized in Table 11.

Potential trespassers and potential future excavation workers were not found to be at risk from exposure to contaminated Site media, primarily due to the assumed short duration of potential exposure. In addition, the risk assessment concluded that there was no significant risk attributable to the Site when evaluating current scenarios. The noncarcinogenic HI

for exposure to groundwater and wind-borne soil contaminants by potential future off-site residents is 69, attributable primarily to groundwater ingestion, which is well above the acceptable level of 1. As was noted previously, the water supply for the City of Cortland is located two miles upgradient of the Site and there are no known users of groundwater downgradient of the Site. The carcinogenic risks related to ingestion, dermal contact, and/or inhalation of vapors from groundwater and surface soils at the Site are outside the acceptable range at 9×10^{-4} (i.e., a nine-in-ten-thousand excess cancer risk) for potential future industrial workers. For potable groundwater ingestion by potential future off-site residents, the risk was 2×10^{-3} (i.e., a two-in-one-thousand excess cancer risk), which is outside the acceptable risk range.

For potential future industrial workers, the noncarcinogenic HIs for ingestion of groundwater and ingestion and inhalation of surface soils (dust) are above the acceptable level of 1. The HI for ingestion of groundwater by future industrial workers is 9 and the HI for ingestion and inhalation of surface soils by future industrial workers is 2.

Ecological Risk Assessment

A four-step process is utilized for assessing Site-related ecological risks for a reasonable maximum exposure scenario: Problem Formulation - a qualitative evaluation of contaminant release, migration, and fate; identification of contaminants of concern, receptors, exposure pathways, and known ecological effects of the contaminants; and selection of endpoints for further study. Exposure Assessment--a quantitative evaluation of contaminant release, migration, and fate; characterization of exposure pathways and receptors; and measurement or estimation of exposure point concentrations. Ecological Effects Assessment--literature reviews, field studies, and toxicity tests, linking contaminant

concentrations to effects on ecological receptors. Risk Characterization--measurement or estimation of both current and future adverse effects.

The ecological risk assessment began with evaluating the contaminants associated with the Site in conjunction with the site-specific biological species/habitat information. The baseline risk assessment concluded that the Site has low value as a wildlife habitat, while surrounding areas provide some limited alternative, preferred habitats. The degree of physical disturbance at the Site and lack of continuous quality habitat in the area are conditions which restrict the extent of use by wildlife. Perplexity Creek and its tributary generally provide low habitat value for aquatic biota due to the intermittent nature of the stream flow.

Raccoons and deer mice were chosen to represent terrestrial receptors potentially exposed to site-related contaminants of concern. For raccoons, estimated doses of cadmium, mercury, and lead exceed the available Lowest-Observed-Adverse-Effect Levels (LOAELs) and No-Observed-Adverse-Effect-Levels (NOAELs). For deer mice, the estimated dose for PCBs exceeds both NOAELs and LOAELs. Estimated doses for mercury, nickel, lead, and barium exceed their respective NOAELs, but not their LOAELs. The primary route of exposure was bioaccumulation of contaminants through the food chain.

Summary of Human Health and Ecological Risks

Based on the results of the baseline risk assessment, EPA has determined that actual or threatened releases of hazardous substances

from the Site, if not addressed by the selected alternative or one of the other active measures considered, may present a current or potential threat to public health, welfare, or the environment.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry analysis uncertainty can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual will actually come in contact with the chemicals of concern, the period of time over which such exposure will occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the Risk Assessment provides upper bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate actual risks related to the Site.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), to-be-considered guidance (TBCs), and site-specific risk-based levels.

The following remedial action objectives were established for the Site:

- Prevent human contact with contaminated soils, sediments, and groundwater;
- Prevent ecological contact with contaminated soils and sediments;
- Mitigate the migration of contaminants from soils/fill to groundwater;
- Mitigate the off-site migration of contaminated groundwater;

- Restore groundwater quality to levels which meet federal and state drinking-water standards (see Tables 12 and 13); and
- Control surface water runoff and erosion.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected Site remedy be protective of human health and the environment, be cost-effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

This ROD evaluates, in detail, four remedial alternatives for addressing the contamination associated with the Site. The four alternatives for the Site are discussed below in detail.

The construction time for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate the performance of the remedy with the responsible parties, or procure contracts for design and construction.

The alternatives are:

Alternative 1: No Action

Capital Cost:	\$0
Annual Operation and Maintenance Cost:	\$60,000
Present-Worth Cost:	\$440,000
Construction Time:	1 Month

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical measures to address the problem of contamination at the Site.

This alternative would, however, include a long-term groundwater monitoring program. Under the monitoring program, water quality samples would be collected semi-annually from upgradient, on-site, and downgradient groundwater monitoring wells. The specifics of monitoring locations, frequency, and parameters would be determined during the remedial design.

The no-action response also includes the development and implementation of a public awareness and education program for the residents in the area surrounding the Site. This program would include the preparation and distribution of informational press releases and circulars and convening public meetings. These activities would serve to enhance the public's knowledge of the conditions existing at the Site. This alternative would also require the involvement of local government, various health departments, and environmental agencies.

Because this alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

Alternative 2: Institutional Controls

Capital Cost:	\$0
Annual Operation and Maintenance Cost:	\$60,000
Present-Worth Cost:	\$440,000
Construction Time:	2 Months

This alternative is identical to Alternative 1, but would also include taking steps to secure institutional controls, including, but not limited to, the placement of restrictions on the installation and use of groundwater wells at and downgradient of the Site, restrictions on excavation, and restrictions on residential use of the property.

It was assumed that the implementation of institutional controls included under this alternative would not add to the overall costs as outlined in Alternative 1.

Alternative 3: Contaminated Soil Hot Spots Excavation and Disposal, Installation of Cap on Former Cooling Pond, Site-Wide Surface Cover, and Monitored Natural Attenuation of Residual Groundwater Contamination

Capital Cost:	\$2,720,000
Annual Operation and Maintenance Cost:	\$60,000
Present-Worth Cost:	\$3,140,000
Construction Time:	1 Year

This alternative includes excavating all TCA-contaminated soils above the NYSDEC recommended soil cleanup objective of 1 mg/kg identified in the Technical and Administrative Guidance Memorandum (TAGM) in two hot spot areas (one immediately downgradient of the former cooling pond in the area around monitoring well W-06 and the other corresponding with test pit T-02) and PCB-contaminated soils above the TAGM objective of 10 mg/kg in two hot spot areas (the northeast portion of the Site and the area of the gantry crane in the central portion). All of these areas are shown on Figure 3. TAGM objectives may be found on Table 14. It is estimated that 2,000 cubic yards of TCA-contaminated soil and 3,000 cubic yards of PCB-contaminated soil would be excavated.

All excavated soils with PCB concentrations less than 50 mg/kg would be consolidated onto the former cooling pond. Those soils with PCB concentrations above 50 mg/kg would be sent off-site for treatment/disposal at a Toxic Substances Control Act (TSCA)-compliant facility. All excavated TCA-contaminated soils would either be sent off-site for treatment/disposal or treated on-site to 1 mg/kg for TCA and used as backfill in the excavations. For cost-estimating purposes, it was assumed that the TCA-contaminated soils would be treated/disposed of off-site.

Nonhazardous debris that is located on the surface of the areas where the site-wide surface cover would be installed and/or is commingled with excavated soil would be removed and consolidated onto the former cooling pond.

A cap meeting the requirements of New York State 6 NYCRR Part 360 regulations would be placed over the 3-acre former cooling pond. Prior to the construction of the cap, the consolidated soils, nonhazardous debris,

and existing fill materials would be regraded and compacted to provide a stable foundation and to promote runoff.

As potential risks remain even after excavation of the contaminant hot spots, a surface cover (e.g., asphalt, soil, crushed stone, etc.) would be placed over the remaining areas of the Site to prevent exposure to residual levels of contaminants in Site soils. The nature of the surface cover would be determined during the remedial design phase.

Under this alternative, monitored natural attenuation would be allowed to address the residual groundwater contamination at and downgradient of the excavated source areas. Natural attenuation of organic contaminants includes dispersion, volatilization, sorption, biodegradation, and biological and chemical stabilization, transformation, or destruction. Natural attenuation of inorganic contaminants is similar to that of organic contaminants, except that there is not a volatilization or biological component. It is estimated that it would take approximately ten years to meet drinking water standards by monitored natural attenuation. As part of a long-term groundwater monitoring program, samples from upgradient, on-site, and downgradient groundwater monitoring wells would be collected and analyzed semi-annually in order to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment. The specifics of monitoring locations, frequency, and parameters would be determined during the design of the selected remedy. If monitored natural attenuation does not appear to be successfully remediating the groundwater, then more active remedial measures would be considered.

This alternative would also include taking steps to secure institutional controls, including, but not limited to, the placement of restrictions on the installation and use of groundwater wells at and downgradient of the Site, restrictions on excavation or other activities which could affect the integrity of the cap/site-wide surface cover, and restrictions on residential use of the property.

Because this alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

Alternative 4: Contaminated Soil Hot Spots Excavation and Disposal, Installation of Cap on Former Cooling Pond, Site-Wide Surface Cover, and Groundwater Extraction and Treatment

Capital Cost:	\$11,755,000
Annual Operation and Maintenance Cost:	\$1,970,000
Present-Worth Cost:	\$19,830,000
Construction Time:	2 Years

This alternative is identical to Alternative 3, except that it would address site-wide groundwater contamination through the installation of a groundwater extraction and treatment system in order to provide a hydraulic barrier between the Site and downgradient areas. It is assumed that groundwater recovery would be achieved through the installation of six recovery wells (pumping 1,200 to 1,500 gpm) located along the northern, hydraulically downgradient, boundary of the Site (just south of

Perplexity Creek). The scope of the extraction system would be determined during remedial design. Following pretreatment for solids and inorganic contaminant removal (as necessary), the extracted groundwater would be treated by air-stripping (or other appropriate treatment) to address organic contamination and then be discharged to the Tioughnioga River. Monitored natural attenuation would be allowed to address the low-level contamination in groundwater that has migrated to downgradient areas. It is estimated that it would take approximately five years of groundwater extraction and treatment to meet drinking water standards.

Because this alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

COMPARATIVE ANALYSIS OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria, namely, overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements, long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment,

short-term effectiveness, implementability, cost, and state and community acceptance.

The evaluation criteria are described below.

- Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
- Compliance with ARARs addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or provide grounds for invoking a waiver.
- Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
- Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.
- Short-term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.
- Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

- Cost includes estimated capital and operation and maintenance costs, and net present-worth costs.
- State acceptance indicates whether, based on its review of the RI/FS reports and the Proposed Plan, the State supports, opposes, and/or has identified any reservations with the selected alternative.
- Community acceptance refers to the public's general response to the alternatives described in the Proposed Plan. Factors of community acceptance to be discussed include support, reservation, and opposition by the community.

A comparative analysis of the remedial alternatives based upon the evaluation criteria noted above follows.

Overall Protection of Human Health and the Environment

Since Alternative 1 (no action) would not address the risks posed through each exposure pathway, it would not be protective of human health and the environment. Alternative 2 (institutional controls) would be marginally more protective than the no-action alternative.

Alternative 3 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and monitored natural attenuation of residual groundwater contamination) and Alternative 4 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and groundwater extraction and treatment) would be significantly more protective than Alternative 1, in that the risk of incidental contact with waste by humans and ecological receptors would be reduced by excavation and disposal of the contaminated soils in the four hot spot areas, installing a cap on the former cooling pond, and installing a site-wide surface cover.

As part of Alternatives 2, 3, and 4, institutional controls would limit the intrusiveness of future activity that could occur on the Site.

Alternatives 1 and 2 would rely upon monitored natural attenuation alone to restore groundwater quality. Alternative 3 would include the removal of source areas (hot spots) in conjunction with monitored natural attenuation. This would result in the restoration of water quality in the aquifer more quickly than monitored natural attenuation alone, but not as expeditiously as Alternative 4, which would include site-wide extraction and treatment of contaminated groundwater. Alternative 4 would mitigate the off-site migration of low-level TCA-contaminated groundwater and would likely lead to a more expeditious groundwater cleanup than the other alternatives, which employ monitored natural attenuation.

Compliance with ARARs

A 6 NYCRR cap is an action-specific ARAR for landfill closure. Therefore, Alternative 3 (soil hot spots excavation, former cooling pond

cap, site-wide surface cover, and monitored natural attenuation of residual groundwater contamination) and Alternative 4 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and groundwater extraction and treatment) would satisfy this action-specific ARAR. Alternatives 1 and 2 would not meet this ARAR, since they do not include any provisions for a cap on the former cooling pond.

Since Alternatives 3 and 4 would involve the excavation of PCB-contaminated soils, their disposition would be governed by the requirements of TSCA. Under these alternatives, those excavated soils which equal or exceed 50 mg/kg PCB would be sent off-site for treatment/disposal at a TSCA-compliant facility.

Alternatives 1 and 2 do not provide for any direct remediation of groundwater or source removal and, therefore, would not comply with chemical-specific ARARs. Although Alternative 3 does not include any active groundwater remediation, the excavation of contaminated soils would significantly reduce the migration of contaminants to the groundwater, thereby enabling Maximum Contaminant Levels (MCLs) and New York State drinking-water standards (chemical-specific ARARs) to be met in the groundwater in a faster time frame than Alternatives 1 and 2. Alternative 4, which includes active groundwater treatment, would be the most effective alternative in reducing groundwater contaminant concentrations.

Long-Term Effectiveness and Permanence

Alternatives 1 (no action) and 2 (institutional controls) would not provide reliable protection of human health and the environment over time. Alternative 3 (soil hot spots excavation, former cooling pond cap, site wide surface cover, and monitored natural attenuation of residual groundwater contamination) and Alternative 4 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and groundwater extraction and treatment) would be more effective over the long-term than Alternatives 1 and 2, because they would remove the hot-spot areas of contamination. Alternative 4 would have the greatest effectiveness in restoring groundwater quality. Alternative 3, which includes a hot-spot excavation component, is expected to restore the aquifer to drinking water quality in approximately ten years. Alternative 4, with both hot-spot excavation and groundwater extraction and treatment components, is expected to restore the aquifer to drinking water quality in approximately five years.

The institutional controls associated with Alternatives 2 through 4 would provide an additional element of effectiveness in preventing exposure of on-site and downgradient receptors to contaminated groundwater.

Under Alternatives 3 and 4, excavating the contaminated soil hot spots, the installation of a cap over the former cooling pond, and the installation of a site-wide surface cover would substantially reduce the residual risk of untreated waste on the Site by essentially isolating it from contact with human and environmental receptors. The adequacy and reliability of the cap and site-wide surface cover to provide long-term protection from waste remaining at the Site should be excellent.

The 6 NYCRR Part 360 cap and site-wide surface cover would require routine inspection and maintenance to ensure long-term effectiveness and permanence. Routine maintenance, as a reliable management control, would include mowing, fertilizing, reseeding and repairing any potential erosion or burrowing rodent damage.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives 1 (no action) and 2 (institutional controls) would rely solely on monitored natural attenuation to reduce the levels of groundwater

contamination. Alternative 3 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and monitored natural attenuation of residual groundwater contamination) would rely on monitored natural attenuation after excavation of the hot-spot areas of contamination to reduce the levels of groundwater contamination. Therefore, these alternatives would not actively reduce the toxicity, mobility, or volume of groundwater contaminants through treatment. Treating contaminated groundwater under Alternative 4 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and groundwater extraction and treatment) would reduce the toxicity, mobility, and volume of contaminants through treatment.

Excavation and disposal of the contaminated soil hot spots, the installation of a cap on the former cooling pond, and a site-wide surface cover under Alternatives 3 and 4 would prevent further migration of and potential exposure to these materials. In addition, under these alternatives, all excavated TCA-contaminated soils would either be sent off-site for treatment/disposal or treated on-site to 1 mg/kg for TCA and used as backfill in the excavations.

Short-Term Effectiveness

Alternatives 1 (no action) and 2 (institutional controls) do not include any physical construction measures in any areas of contamination and, therefore, do not present a risk to the community as a result of their implementation. Alternatives 3 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and monitored natural attenuation of residual groundwater contamination) and 4 (soil hot spots excavation, former cooling pond cap, site-wide surface cover, and groundwater extraction and treatment) involve excavating, moving, placing, and regrading contaminated soils. Since Alternative 4 includes ex-situ treatment of the extracted groundwater, it would generate quantities of treatment byproducts that would have to be handled by on-site workers and removed off-site for treatment/disposal. Alternative 4 also includes the installation of extraction wells through potentially contaminated soils and groundwater. While both of the action alternatives present some risk to on-site workers through dermal contact and inhalation, these exposures can be minimized by utilizing proper protective equipment. The vehicle traffic associated with the cap and surface cover construction, and the off-site transport of contaminated soils could impact the local roadway system and nearby residents through increased noise level. Under Alternatives 3 and 4, disturbance of the land during construction could affect the surface water hydrology of the Site. There is a potential for increased stormwater runoff and erosion during excavation and construction activities that would be properly managed to prevent excessive water and sediment loading.

It is estimated that Alternative 1 would require one month to implement, since developing a long-term groundwater monitoring program would be the only activity required. It is estimated that the implementation of institutional controls under Alternative 2 would take an additional month to implement. Alternative 3 could be implemented in about one year. Alternative 4 would take an estimated two years to implement.

Implementability

Performing routine groundwater monitoring and effecting institutional controls are all actions that can be readily implemented. These actions are technically and administratively feasible and require readily available

materials and services. Excavating and relocating the contaminated soil, transporting materials to an off-site treatment/disposal facility, installing a cap and site-wide surface cover (Alternatives 3 and 4), and installing extraction wells (Alternative 4), although more difficult to implement than

the no-action alternative, can be accomplished using technologies known to be reliable and can be readily implemented. Equipment, services and materials for this work are readily available. These actions would also be administratively feasible.

Air stripping (Alternative 4) is a process through which VOCs are transferred from the aqueous phase to an air stream. Air stripping has been effectively used to remove over 99 percent of VOCs from groundwater at numerous hazardous waste and spill sites.

Alternative 4 involves the extraction of over one million gallons per day and, in order to handle this volume of water, installation of a pipeline to the Tioughnioga River. Alternative 4 also would involve the generation of sludge requiring off-site disposal. These considerations make Alternative 4 more difficult to implement in comparison to the other alternatives.

Cost

The present-worth costs for Alternatives 1 through 3 are calculated using a discount rate of 7 percent and a ten-year time interval. The results of modeling indicate that groundwater could be reasonably expected to be restored to drinking water standards via monitored natural attenuation in ten years. The present-worth cost for Alternative 4 is calculated using a discount rate of 7 percent and a five-year time interval. It is estimated that groundwater could be reasonably expected to be restored to drinking water standards via extraction and treatment in five years. The estimated capital, annual O&M, and present-worth costs for each of the alternatives are presented below.

Alternative No.	Capital Cost	Operation and Maintenance Cost	Present-Worth Cost
1	\$0	\$60,000	\$440,000
2	\$0	\$60,000	\$440,000
3	\$2,720,000	\$60,000	\$3,140,000
4	\$11,755,000	\$2,000,000	\$19,830,000

As can be seen by the cost estimates, Alternatives 1 and 2 (No Action and Institutional Controls, respectively) are the least costly remedies at

\$440,000. Alternative 4 (Downgradient Perimeter Groundwater Recovery and Treatment) is the most costly remedy at \$19,830,000.

State Acceptance

NYSDEC concurs with the selected remedy.

Community Acceptance

Comments received during the public comment period indicate that the public generally supports the selected remedy. Comments received

during the public comment period are summarized and addressed in the Responsiveness Summary, which is attached as Appendix V to this document.

DESCRIPTION OF THE SELECTED REMEDY

Based upon an evaluation of the various alternatives, EPA and NYSDEC have determined that Alternative 3 (contaminated soil hot spot excavation and disposal, installation of a cap on the former cooling pond, a site-wide surface cover, and groundwater monitored natural attenuation) is an appropriate remedy for the Site. Specifically, this would involve the following:

- Excavation of all 1,1,1-trichloroethane (TCA)-contaminated soils above 1 milligram per kilogram (mg/kg) in two hot spot areas (one immediately downgradient of the former cooling pond in the monitoring well W-06 area and the other corresponding with test pit T-02) and PCB-contaminated soils above 10 mg/kg in two hot spot areas (the northeast portion of the Site and the area of the gantry crane in the central portion)² . The actual extent of the excavations and the volume of the excavated material will be based on post excavation confirmatory sampling. Clean or treated material will be used as backfill in the excavated areas.
- Consolidation of all excavated soils with PCB concentrations less than 50 mg/kg onto the former cooling pond. Those soils with PCB concentrations above 50 mg/kg will be sent off-site for treatment/disposal at a Toxic Substances Control Act (TSCA)-

2 See Figure 3 for locations of the areas to be remediated.

compliant facility. All excavated TCA-contaminated soils will either be sent off-site for treatment/disposal or treated on-site to 1 mg/kg for TCA and used as backfill in the excavations.

- Removal and consolidated onto the former cooling pond of non-hazardous debris located on surface areas where the site-wide surface cover will be installed and/or is commingled with the excavated soil.
- Placement of a cap meeting the requirements of New York State 6 NYCRR Part 360 regulations over the three-acre former cooling pond. Prior to the construction of the cap, the consolidated soils, non-hazardous debris, and existing fill materials will be regraded and compacted to provide a stable foundation and to promote runoff.
- Construction of a chain-link fence around the former cooling pond after it is capped.
- Placement of a surface cover over the remaining areas of the Site to prevent direct contact with residual levels of contaminants in Site soils. The nature of the surface cover will be determined during the remedial design phase.
- Monitored natural attenuation to address the residual groundwater contamination in downgradient areas. As part of a long-term

groundwater monitoring program, sampling will be conducted in order to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment.

- Implementation of regrading and storm-water management improvements to protect the integrity of the cap/surface cover.
- Employment of dust and VOC control/suppression measures during all construction and excavation activities, as necessary, pursuant to state and federal guidance.
- Long-term monitoring will evaluate the remedy's effectiveness. The exact frequency, location, and parameters of groundwater monitoring will be determined during remedial design. Monitoring will include a network of groundwater monitoring wells, including the

installation of new monitoring wells (as necessary). Monitoring will also include several sediment sampling stations.

- Taking steps to secure institutional controls, such as deed restrictions and contractual agreements, as well as local ordinances, laws, or other government action, for the purpose of, among other things, restricting the installation and use of groundwater wells at and downgradient of the Site, restricting excavation or other activities which could affect the integrity of the cap/site-wide surface cover, and restricting residential use of the property in order to reduce potential exposure to site-related contaminants.
- Reevaluation of Site conditions at least once every five years to determine if a modification to the selected alternative is necessary.

It is anticipated that excavation of the two PCB hot spot areas and the installation of the site-wide surface cover on a portion of the Site will be performed pursuant to a Unilateral Administrative Order issued by EPA in early March 1998.

Data indicate that the groundwater contamination in the monitoring well W-06 area is of an intermittent nature and that TCA levels in groundwater along the Site's downgradient perimeter are present at relatively low levels. These conditions, combined with the removal of the TCA source areas, extremely high groundwater flow, and the presence of intrinsic conditions favorable to contaminant degradation, is expected to lead to the timely groundwater restoration via monitored natural attenuation (in approximately 10 years), without relying on a costly groundwater extraction and treatment system.

If, however, monitored natural attenuation does not appear to be successful in remediating the groundwater, then more active remedial measures would be considered. EPA may also invoke a waiver of groundwater Applicable or Relevant and Appropriate Requirements (ARARs) if the remediation program and further monitoring data indicate that reaching Maximum Contaminant Levels (MCLs) in the aquifer is technically impracticable.

The selected alternative will provide the best balance of trade-offs among alternatives with respect to the evaluating criteria. EPA and NYSDEC believe that the selected alternative will be protective of human health

and the environment, will comply with ARARs, will be cost-effective, and will utilize permanent solutions to the maximum extent practicable.

STATUTORY DETERMINATIONS

As was previously noted, CERCLA §121(b)(1), 42 U.S.C. §9621(b)(1), mandates that a remedial action must be protective of human health and the environment, cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. CERCLA §121(d), 42 U.S.C. §9621(d), further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. §9621(d)(4).

For the reasons discussed below, EPA has determined that the selected remedy meets the requirements of CERCLA §121, 42 U.S.C. §9621.

Protection of Human Health and the Environment

The selected remedy protects human health and the environment by reducing levels of contaminants in the groundwater and soil through extraction and treatment, respectively, as well as through the implementation of institutional controls. The selected remedy will provide overall protection by reducing the toxicity, mobility, and volume of contamination and by meeting federal and state MCLs.

Compliance with Applicable or Relevant and Appropriate Requirements of Environmental Laws

While there are no federal or New York State soil ARARs for VOCs, one of the remedial action goals is to meet TAGM objectives. The selected remedy will meet soil TAGM objectives in the soil source areas.

As the aquifer is usable, federal MCLs and state drinking water standards are ARARs. The selected remedy will be effective in meeting these

ARARs, since it includes excavation of the source areas in combination with monitored natural attenuation of the groundwater 3.

A summary of action-specific, chemical-specific, and location-specific ARARs which will be complied with during implementation is presented below. A listing of the individual chemical-specific ARARs is presented in Tables 11 and 12.

Action-specific ARARs:

- 6 NYCRR Part 257, Air Quality Standards
- 6 NYCRR Part 373, Fugitive Dusts
- 40 CFR 50, Air Quality Standards

- Resource Conservation and Recovery Act

Chemical-specific ARARs:

- Safe Drinking Water Act (SDWA) MCLs and MCL Goals (MCLGs) 40 CFR Part 141
- 6 NYCRR Parts 700-705 Groundwater and Surface Water Quality Regulations
- 10 NYCRR Part 5 State Sanitary Code

Location-specific ARARs:

- Clean Water Act Section 404, 33 U.S.C. 1344
- National Historic Preservation Act

- 3 Because data indicate that TCA contamination in the groundwater is intermittent, the removal of TCA source areas, extremely high groundwater flow, and the presence of intrinsic conditions favorable to contaminant degradation, is expected to lead to timely groundwater restoration via monitored natural attenuation.

Other Criteria, Advisories, or Guidance To Be Considered:

- New York Guidelines for Soil Erosion and Sediment Control
- New York State Air Cleanup Criteria, January 1990
- New York State Technical and Administrative Guidance Memorandum (TAGM)
- New York State Air Guide-1

Cost-Effectiveness

The selected remedy provides for overall effectiveness in proportion to its cost and in mitigating the principal risks posed by contaminated soil and groundwater. The estimated cost for the selected remedy has a capital cost of \$2,720,000, annual operation and maintenance of \$60,000, and a 10-year present-worth cost of \$3,140,000.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable by the excavation and disposal of source area soils.

Preference for Treatment as a Principal Element

The selected remedy's utilization of on- or off-site treatment/disposal of the TCA-contaminated source area soils and off-site treatment/disposal of source area soils exceeding 50 mg/kg PCBs satisfies the statutory preference for remedies employing treatment that permanently and significantly reduces the toxicity, mobility, or volume of hazardous substances.

DOCUMENTATION OF SIGNIFICANT CHANGES

There are no significant changes from the selected alternative presented in the Proposed Plan.

APPENDIX

FIGURES

FIGURES

FIGURE 1 SITE LOCATION MAP

FIGURE 2 SITE LAYOUT MAP WITH MONITORING WELL LOCATIONS

FIGURE 3 AREAS OF CONCERN

FIGURE4 DISTRIBUTION OF 1,1,1-TCA IN GROUNDWATER

APPENDIX II

TABLES

TABLES

TABLE 1	SURFACE SOIL SAMPLING DATA
TABLE 2	PCB SOIL SAMPLING DATA (NORTHEAST PORTION OF SITE)
TABLE 3	SUBSURFACE SOIL SAMPLING DATA
TABLE 4	GROUNDWATER SAMPLING DATA
TABLE 5	SUMMARY OF ALL GROUNDWATER SAMPLING DATE FOR TCA
TABLE 6	CONTAMINANTS OF CONCERN
TABLE 7	SUMMARY OF EXPOSURE ROUTES
TABLE 8	REFERENCE DOSES FOR COMPOUNDS OF CONCERN
TABLE 9	SLOPE FACTORS FOR COMPOUNDS OF CONCERN
TABLE 10	SUMMARY OF NON-CARCINOGENIC RISKS (HI DATA)

TABLE 11	SUMMARY OF CARCINOGENIC RISKS
TABLE 12	FEDERAL MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
TABLE 13	STATE MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
TABLE 14	NYSDEC TAGM OBJECTIVES FOR VOLATILE ORGANICS IN SOIL

TABLE 2

SUPPLEMENTAL SOIL CHARACTERIZATION OF POTENTIAL PCB AREA
NOVEMBER/DECEMBER 1993
ROSEN SITE
CORTLAND, NEW YORK

PCB FIELD SCREENING RESULTS

Boring Identification		P-1 P-5		P-2		P-3	
(ppm)	Interval (ft)	Interval (ft)	Result (ppm)	Interval (ft)	Result (ppm)	Interval (ft)	Result
<25	0-1	0-1	>1, <25	0-1	>1, <25	0-1	>1,
		>1, <25	0-1	>1, >25			
1-2	<1	1-2	>1, <25	1-2	<1	1-2	<1
		0-1 (Dup)	>1, >25				
2-3	<1	2-3	>1, >25	2-3	<1	2-3	<1
		1-2	>1, >25				
2-3		3-4	<1				
		>1, >25					
3-4		4-5	<1				
		No Recovery					
4-5		No Recovery					

5-6	>1, >25			
6-7	>1, <25			
7-8	>1, <25			
Total Depth	5.0		3.0	3.0
3.0	10.0			
Drilled (ft)				

Boring Identification	P-6		P-7		P-8	
P-9	P-10					
Interval (ft)	Result (ppm)	Interval (ft)	Result (ppm)	Interval (ft)	Result (ppm)	Interval (ft)
>25	0-1	>1, >25	0-1	<1	0-1	>1,
>25	1-2	<1	1-2	<1	1-2	>1,
2-3	<1	>1, <25	2-3	NR	2-3	<1
	3-4	<1	3-4	<1	3-4	<1
	4-5	NR	4-5	<1	4-5	<1
	5-6	<1	4-5 (Dup)	<1		
	6-7	<1				
	6-7 (Dup)	<1				
Total Depth						
Drilled (ft)	10.0		8.0		10.0	
10.0	10.0					

(See Notes on Page 2)

0294840LOF
21-Apr-94

1 of 2

TABLE 2

SUPPLEMENTAL SOIL CHARACTERIZATION OF POTENTIAL PCB AREA
NOVEMBER/DECEMBER 1993
ROSEN SITE
CORTLAND, NEW YORK

PCB FIELD SCREENING RESULTS

Boring Identification	P-11		P-12		P-13	
Interval (ft)	Result (ppm)	Interval (ft)	Result (ppm)	Interval (ft)	Result (ppm)	
0-1	>1, <25	0-1	>1, <25	0-1	<1	
1-2	>1, <25	1-2	<1	1-2	<1	
1-2 (Dup)	>1, <25	2-3	<1	2-3	<1	
2-3	<1	3-4	<1			
3-4	<1	4-5	>1, <25			
3-4 (Dup)	<1	5-6	<1			
4-5	<1	6-7	<1			

	4-5 (Dup)	<1	6-7 (Dup)	<1	
	5-6	<1	7-8	<1	
Total Depth					
Drilled (ft)	10.0		9.0		10.0

Notes:
 ppm = Parts per million.
 Dup = Duplicate sample.
 >1 = Greater than 1 ppm.
 <25 = Less than 25 ppm.
 NR = No recovery of soil in the split barrel sampler.

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Apr-94		

TABLE 4
GROUND-WATER ANALYTICAL RESULTS
EVENT 1
GENERAL WATER QUALITY PARAMETERS
MAY 1991

ROSEN SITE
CORTLAND, NEW YORK

Compound	W01	W02	W02 Dup.	W03	W10	W11
Total Alkalinity	89	223	222	137	134	206
Biochemical Oxygen Demand	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Organic Carbon	<1.0	1.8	2.1	<1.0	1.8	2.0
Chemical Oxygen Demand	10	22	19	11	52	29
Total Hardness	143	502	473	235	786	1,320
Filterables Residue (180°C)	181	491	510	275	312	1,390
Non-Filterable Residue (103°C)	298	1,350	786	158	5,000	1,490
Sulfate	76	284	320	65	688	882
Silicon Dioxide	8.8	17	8.6	5.1	110	36

Notes:

All concentrations and detection levels are reported as mg/L equivalent to parts per million (ppm).

Dup. - indicates field duplicate.

The < sign indicates the compound was analyzed for but not detected.

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TABLE 4
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
SEMIVOLATILE ORGANICS
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

New York State

Standards/Guidan Compound	MCLs/ MCLGs	W-15	W-16	W-17	W-18	W-18 Dup.	W-19	W-20	W-21
W-22	co Values								

Phenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
Bis(2-Chloroethyl)Ether	<12	<12	<12	<12	<12	<12	<11	<18
<12 1.0								
2-Chlorophenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
1,3-Dichlorobenzene	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
1,4-Dichlorobenzene	<12	<12	<12	<12	<12	<12	<11	<18
<12 4.7								
750/750 (G)								
Benzyl Alcohol	<12	<12	<12	<12	<12	<12	<11	<18
<12								
1,2-Dichlorobenzene	<12	<12	<12	<12	<12	<12	<11	<18
<12 4.7								
600/600 (G)								
2-Methylphenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
Bis(2-Chloroisopropyl)Ether	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
4-Methylphenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
N-Nitroso-di-n-Propylamine	<12	<12	<12	<12	<12	<12	<11	<18
<12								
Hexachloroethane	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
Nitrobenzene	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
Isophorone	<12	<12	<12	<12	<12	<12	<11	<18
<12 50 (G)								
2-Nitrophenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
2,4 Dimethylphenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
Benzoic Acid	<62	<59	<62	<62	<62	<62	<56	<91
<62								
Bis(2-Chloroethoxy)Methane	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
2,4-Dichlorophenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
1,2,4-Trichlorobenzene	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
70/70 (G)								
Naphthalene	<12	<12	<12	<12	<12	<12	<11	<18
<12 10 (G)								
4-Chloroaniline	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
Hexachlorobutadiene	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
4-Chloro-3-Methylphenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								
2-Methylnaphthalene	<12	<12	<12	<12	<12	<12	<11	<18
<12								
Hexachlorocyclopentadiene	<12	<12	<12	<12	<12	<12	<11	<18
<12 5								
50/50 (G)								
2,4,6-Trichlorophenol	<12	<12	<12	<12	<12	<12	<11	<18
<12 1 a								

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
SEMIVOLATILE ORGANICS
FEBRUARY 1992

[illegible]

Anthracene		<12	<12	<12	<12	<12	<12	<11	<18
<12	50 (G)	50							
Di-n-Butylphthalate		<12	<12	<12	<12	<12	<12	<11	<18
<12	50								
Fluoranthene		<12	<12	<12	<12	<12	<12	<11	<18
<12	50 (G)								
Pyrene		<12	<12	<12	<12	<12	<12	<11	<18
<12	50 (G)								

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
SEMIVOLATILE ORGANICS
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

New York State

		W-18							
Standards/Guidan	MCLs/								
Compound		W-15	W-16	W-17	W-18	Dup.	W-19	W-20	W-21
W-22	co Values	MCLGs							
Butylbenzylphthalate		<12	<12	<12	<12	<12	<12	<11	<18
<12	50 (G)	100/0 (G)							
3,3 a -Dichlorobenzidine		<25	<24	<25	<25	<25	<25	<22	<36
<25	5								
Benzo(a)Anthracene		<12	<12	<12	<12	<12	<12	<11	<18
<12	0.002 (G)	0.1/0 (G)							
Chrysene		<12	<12	<12	<12	<12	<12	<11	<18
<12	0.002 (G)	0.2/0 (G)							
Bis(2-Ethylhexyl)Phthalate		<12	<12	<12	<12	<12	<12	<11	<18
<12	50	6/0.0 (G)							
Di-n-Octyl Phthalate		<12	<12	<12	<12	<12	<12	<11	<18
<12	50 (G)								
Benzo(b)Fluoranthene		<12	<12	<12	<12	<12	<12	<11	<18
<12	0.002 (G)	0.2/0 (G)							
Benzo(k)Fluoranthene		<12	<12	<12	<12	<12	<12	<11	<18
<12	0.002 (G)	0.2/0 (G)							
Benzo(a)Pyrene		<12	<12	<12	<12	<12	<12	<11	<18
<12	ND	0.2/0 (G)							
Indeno(1,2,3-cd)Pyrene		<12	<12	<12	<12	<12	<12	<11	<18
<12	0.002 (G)	0.4/0 (G)							
Dibenz(a,h)Anthracene		<12	<12	<12	<12	<12	<12	<11	<18
<12		0.3/0 (G)							
Benzo(g,h,i)Perylene		<12	<12	<12	<12	<12	<12	<11	<18
<12									
TOTAL TIC					535J	778J	17J		

Notes:

All concentrations, detection levels, standard values, guidance values, and MCLs/MCLGs are reported as $\mu\text{g/L}$ equivalent to parts per billion (ppb).
 Dup. - Indicates field duplicate.
 The < sign indicates the compound was analyzed for but not detected.
 (1) - This compound cannot be separated from Diphenylamine.
 a The standard value of $\mu\text{g/L}$ applies to the maximum limit for the sum of all Phenolic compound concentrations.
 TIC - Tentatively Identified Compounds.
 ND - Non-detectable.
 J - Indicates an estimated value.

References:

Standard and guidance values are according to New York State Department of Environmental Conservation (NYSDEC), Division of Water Technical and Operation Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values [designated by (G)], October 1993.

MCLs [Maximum Contaminant Levels] and MCLGs [Maximum contaminant Level Goals, designated by (G)] according to the Code of Federal Regulations, Protection of Environment 40, Part 141, July 1, 1991, and the Drinking Water Regulations and Health Advisories, Office of Water, U.S. Environmental Protection Agency, December 1993.

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TABLE 4
 GROUND-WATER ANALYTICAL RESULTS - EVENT 2
 PESTICIDES/PCBs
 FEBRUARY 1992

ROSEN SITE
 CORTLAND, NEW YORK

Compound MCLs/MCLGs	W-01	W-02	W-02 Dup.	W-03	W-04	W-05	W-06	New York State Standards/Guidance Values
Aroclor-1016 0.5/0 (G) a	<0.62	<0.62	<0.62	<0.56	<0.54	<0.62	<0.58	0.1 a
Aroclor-1221 0.5/0 (G) a	<0.62	<0.62	<0.62	<0.56	<0.54	<0.62	<0.58	0.1 a
Aroclor-1232 0.5/0 (G) a	<0.62	<0.62	<0.62	<0.56	<0.54	<0.62	<0.58	0.1 a
Aroclor-1242 0.5/0 (G) a	<0.62	<0.62	<0.62	<0.56	<0.54	<0.62	<0.58	0.1 a
Aroclor-1248	<0.62	<0.62	<0.62	<0.56	<0.54	<0.62	<0.58	0.1 a

0.5/0 (G) a								
Aroclor-1254	<1.2	<1.2	<1.2	<1.1	<1.1	<1.2	<1.2	0.1 a
0.5/0 (G) a								
Aroclor-1260	<1.2	<1.2	<1.2	<1.1	<1.1	<1.2	<1.2	0.1 a
0.5/0 (G) a								

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
PESTICIDES/PCBs
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

Compound	W-07	W-08	W-09	W-10	W-11	W-11 Dup.	New York State Standards/Guidance Values	MCLs/MCLGs
Aroclor-1016	<0.62	<0.62J	<0.62	<0.56	<0.62	<0.62	0.1 a	0.5/0 (G)
a								
Aroclor-1221	<0.62	<0.62J	<0.62	<0.56	<0.62	<0.62	0.1 a	0.5/0 (G)
a								
Aroclor-1232	<0.62	<0.62J	<0.62	<0.56	<0.62	<0.62	0.1 a	0.5/0 (G)
a								
Aroclor-1242	<0.62	<0.62J	<0.62	<0.56	<0.62	<0.62	0.1 a	0.5/0 (G)
a								
Aroclor-1248	<0.62	<0.62J	<0.62	<0.56	<0.62	<0.62	0.1 a	0.5/0 (G)
a								
Aroclor-1254	4.3	<1.2J	<1.2	<1.1	<1.2	<1.2	0.1 a	0.5/0 (G)
a								
Aroclor-1260	<1.2	<1.2J	<1.2	<1.1	<1.2	<1.2	0.1 a	0.5/0 (G)
a								

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
PESTICIDES/PCBs
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

Compound	W-12	W-13	W-14	W-15	W-16	W-17	New York State Standards/Guidance Values	MCLs/MCLGs
----------	------	------	------	------	------	------	--	------------

Aroclor-1016	<0.62	<0.62	<0.62	<0.56	<0.56	<0.56	0.1 a	0.5/0 (G) a
Aroclor-1221	<0.62	<0.62	<0.62	<0.56	<0.56	<0.56	0.1 a	0.5/0 (G) a
Aroclor-1232	<0.62	<0.62	<0.62	<0.56	<0.56	<0.56	0.1 a	0.5/0 (G) a
Aroclor-1242	<0.62	<0.62	<0.62	<0.56	<0.56	<0.56	0.1 a	0.5/0 (G) a
Aroclor-1248	<0.62	<0.62	<0.62	<0.56	<0.56	<0.56	0.1 a	0.5/0 (G) a
Aroclor-1254	<1.2	<1.2	<1.2	<1.1	<1.1	<1.1	0.1 a	0.5/0 (G) a
Aroclor-1260	<1.2	<1.2	<1.2	<1.1	<1.1	<1.1	0.1 a	0.5/0 (G) a

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
PESTICIDES/PCBs
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

Compound	W-18	W-18 Dup.	W-19	W-20	W-21	W-22	New York State Standards/Guidance Values	MCLs/MCLGs
Aroclor-1016	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 a	0.5/0 (G)
a								
Aroclor-1221	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 a	0.5/0 (G)
a								
Aroclor-1232	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 a	0.5/0 (G)
a								
Aroclor-1242	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 a	0.5/0 (G)
a								
Aroclor-1248	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 a	0.5/0 (G)
a								
Aroclor-1254	<1.1	<1.1	<1.1	<1.2	<2.2	<1.1	0.1 a	0.5/0 (G)
a								
Aroclor-1260	<1.1	<1.1	<1.1	<1.2	<2.2	<1.1	0.1 a	0.5/0 (G)
a								

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
PESTICIDES/PCBs
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

New York State

Compound MCLs/MCLGs	W-15	W-16	W-17	Standards/Guidance Values	
alpha-BHC	<0.056	<0.056	<0.056	ND	
beta-BHC	<0.056	<0.056	<0.056	ND	
delta-BHC	<0.056	<0.056	<0.056	ND	
gamma-BHC(Lindane) (G)	<0.056	<0.056	<0.056	ND	0.2/0.2
Heptachlor (G)	<0.056	<0.056	<0.056	ND	0.4/0
Aldrin	<0.056	<0.056	<0.056	ND	
Heptachlor epoxide (G)	<0.056	<0.056	<0.056	ND	0.2/0
Endosulfan I	<0.056	<0.056	<0.056		
Dieldrin	<0.11	<0.11	<0.11	ND	
4,4'-DDE	<0.11	<0.11	<0.11	ND	
Endrin	<0.11	<0.11	<0.11	ND	2/2(G)
Endosulfan II	<0.11	<0.11	<0.11		
4,4'-DDD	<0.11	<0.11	<0.11	ND	
Endosulfan sulfate	<0.11	<0.11	<0.11		
4,4'-DDT	<0.11	<0.11	<0.11	ND	
Methoxychlor (G)	<0.56	<0.56	<0.56	35	40/40
Endrin ketone	<0.11	<0.11	<0.11	5	
alpha-chlordane b	<0.56	<0.56	<0.56	0.1 b	2/0 (G)
gamma-chlordane b	<0.56	<0.56	<0.56	0.1 b	2/0 (G)
Toxaphene (G)	<1.1	<1.1	<1.1	ND	3/0

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
PESTICIDES/PCBs
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

Compound MCLs/MCLGs	W-18	W-18 Dup.	W-19	W-20	W-21	W-22	New York State Standards/Guidance Values
alpha-BHC	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND
beta-BHC	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND
delta-BHC	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND
gamma-BHC(Lindane) 0.2/0.2 (G)	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND
Heptachlor 0.4/0 (G)	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND
Aldrin	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND

Heptachlor epoxide 0.2/0 (G)	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056	ND	
Endosulfan I	<0.056	<0.056	<0.056	<0.062	<0.11	<0.056		
Dieldrin	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11	ND	
4,4'-DDE	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11	ND	
Endrin (G)	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11	ND	2/2
Endosulfan II	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11		
4,4'-DDD	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11	ND	
Endosulfan sulfate	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11		
4,4'-DDT	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11	ND	
Methoxychlor 40/40 (G)	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	35	
Endrin ketone	<0.11	<0.11	<0.11	<0.12	<0.22	<0.11	5	
alpha-chlordone (G) b	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 b	2/0
gamma-chlordane (G) b	<0.56	<0.56	<0.56	<0.62	<1.1	<0.56	0.1 b	2/0
Toxaphene (G)	<1.1	<1.1	<1.1	<1.2	<2.2	<1.1	ND	3/0

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TABLE 4 (Cont.)
GROUND-WATER ANALYTICAL RESULTS - EVENT 2
PESTICIDES/PCBs
FEBRUARY 1992

ROSEN SITE
CORTLAND, NEW YORK

Notes:

All concentrations, detection levels, standard values, guidance values, MCLs, and MCLGs are reported as ug/L equivalent to parts per billion (ppb).

Dup. - indicates field duplicate.

The < sign Indicates the compound was analyzed for but not detected.

a The standard value and MCLs/MCLGs apply to the maximum limit for the sum of all Aroclor concentrations.

b The standard value and MCLs/MCLGs apply to chlordane.

J - Indicates and estimated value.

ND - Non-detectable concentration by the approved analytical methods referenced in section 700.3 of 6 NYCRA Parts 700-705, Water Quality Regulations.

- Did not analyze for this parameter.

Bold Indicates NYSDEC standard exceeded; shading indicates federal MCL exceeded.

References:

Standard and guidance values are according to New York State Department of Environmental Conservation (NYSDEC), Division of Water Technical and Operation Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values [designated by (G)], October 1993.

MCLs [Maximum Contaminant Levels] and MCLGs [Maximum contaminant Level Goals, designated by (G)] according to the Code of Federal Regulations, Protection

of Environment 40, Part 141, July 1, 1991, and the Drinking Water Regulations and Health
Advisories, Office of Water, U.S. Environmental Protection Agency, December
1993.

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GROUND-WATER ANALYTICAL RESULTS - EVENT 5
INORGANICS
JUNE 1993

ROSEN SITE
CORTLAND, NEW YORK

Notes:

All concentrations, detection levels, standard values, guidance values, and MCLs/MCLGs/SMCLs are reported as ug/L equivalent to parts per billion (ppb).

The < sign Indicates the compound was analyzed for but not detected.

B - Indicates a value greater than or equal to the Instrument detection limit but less than the contract required detection limit.

E - Indicates a value estimated or not reported due to the presence of Interference.

S - Indicates value determined by Method of Standard Addition.

J - Indicates an estimated value.

R - Indicates the associated value Is unusable.

a - Applies to the sum of Iron (maximum 300 ug/L) and manganese.

Bold Indicates NYSDEC standards or guidance value exceeded; shading Indicates federal MCLs/SMCLs exceeded.

References:

Standard and Guidance values are according the New York State Department of Environmental Conservation, Division of Water Technical

and Operation Guidance Series Ambient Water Quality Standards and Guidance Values [designated by (G)], October 1993.

MCLs [Maximum Contaminant Levels], MCLGs [Maximum Contaminant Level Goals, designated by (G)], and SMCLs [Secondary Maximum

Contaminant Levels, designated by (S)] according to the Code of Federal Regulations, Protection of Environment 40, Part 141, July 1, 1991,

and the Drinking Water Regulations and Health Advisories, Office of Water, U.S. Environmental Protection Agency. December 1993.

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Table 5

Summary of Analytical Data (Detects only) for TCA Concentration in Groundwater
Rosen Site
Cortland, New York

[illegible]

2/92	7	1100 D	40 D	190 D	8	190 D	390 D	36	16 J	28
260 D										
12/93	NA	100	NA	NA	NA	NA	NA	NA	NA	NA
NA										
3/95	24 DJ	110 DJ	41 DJ	120 J	ND	110 D	160 J	23	(4)	68 DJ
210 D										
8/95	(2)	15	68	26	(0.78 J)	100 D	84 D	38 D	11	38
140										
12/95	NA	5000 D	(3.7)	16	9.4	46	65	23	(2.3)	(3.6)
54										
3/96	NA	1000 D	7.4	22 D	8.5	88	45 D	22	5.2	25
62										
8/96	NA	240	NA	30 D	NA	NA	41	NA	NA	30 D
83										

Notes:

Concentrations reported in ug/L (equivalent to ppb).

() Concentration detected, but not above state or federal standards.

J Indicates estimated value.

D Indicates sample dilution occurred during analysis.

NA Not analyzed.

ND Not detected above method detection limit.

TABLE 6

CHEMICAL OF INTEREST IN ON-SITE GROUND WATER
UPPER OUTWASH

ROSEN SITE
CORTLAND, NEW YORK

95% Upper	Frequency		Arithmetic	
Bound	of		Mean	Standard
Chemical(a)	RME	Range of Sample	Concentration (b)	Deviation
Concentration (c)	Detection Concentration (d)	Concentrations		
Organics				
1,1-DICHLOROETHANE	22/ 28	ND - 0.425	4.30E-02	1.01E-01
7.80E-02	7.80E-02			
1,1-DICHLOROETHENE	14/ 28	ND - 0.013	2.27E-03	3.42E-03
3.00E-03	3.00E-03			
1,1,1-TRICHLOROETHANE	26/ 28	ND - 3.1	2.00E-01	5.99E-01
4.08E-01	4.08E-01			
1,2-DICHLOROETHANE	5/ 28	ND - 0.029	1.00E-03	1.00E-03
1.00E-03	1.00E-03			
1,2-DICHLOROETHENE (total)	5/ 28	ND - 0.056	4.60E-03	1.40E-02
1.00E-02	1.00E-02			
ACETONE	2/ 28	ND - 0.017	2.00E-02	2.90E-02
2.80E-02	1.70E-02			
AROCLOR 1254	2/ 24	ND - 0.011	1.28E-03	2.27E-03
2.20E-02	1.10E-02			
BROMOFORM	2/ 28	ND - 0.0002	2.47E-03	9.00E-03
6.00E-03	2.00E-04			
CHLOROMETHANE	4/ 28	ND - 0.014	4.00E-03	9.00E-03
7.00E-03	7.00E-03			

CHLOROETHANE	3/	28	ND -	0.023	2.40E-03	4.00E-03
4.00E-03	4.00E-03					
CHLOROFORM	2/	28	ND -	0.0003	1.00E-03	1.00E-03
1.00E-03	3.00E-04					
ETHYLBENZENE	4/	28	ND -	0.071	3.30E-03	1.26E-02
8.00E-03	8.00E-03					
METHYLENE CHLORIDE	4/	28	ND -	0.096	7.00E-03	1.90E-02
1.50E-02	1.50E-02					
TETRACHLOROETHENE	8/	28	ND -	0.079	5.10E-03	1.63E-02
1.00E-02	1.00E-02					
TOLUENE	4/	28	ND -	1.5	5.10E-02	2.69E-01
1.51E-01	1.51E-01					
TRICHLOROETHENE	22/	28	ND -	0.15	8.00E-03	2.77E-02
1.80E-02	1.80E-02					
XYLENES	5/	28	ND -	0.71	2.50E-02	1.27E-01
7.20E-02	7.20E-02					

Inorganics

ALUMINUM	24/	24	0.0511 -	67	1.87E+01	2.20E+01
2.80E+01	2.80E+01					
ANTIMONY	4/	24	ND -	0.1045	1.80E-02	2.70E-02
2.90E-02	2.90E-02					
ARSENIC	5/	11	ND -	0.116	1.60E-02	3.20E-02
3.70E-02	3.70E-02					
BARIUM	23/	24	ND -	0.614	2.20E-01	1.81E-01
3.00E-01	3.00E-01					
CADMIUM	11/	24	ND -	0.0898	1.60E-02	2.30E-02
2.50E-02	2.50E-02					
CHROMIUM	21/	24	ND -	0.2	5.02E-02	6.30E-02
8.00E-02	8.00E-02					
COBALT	7/	24	0.01 -	0.102	2.03E-02	2.10E-02
3.00E-02	3.00E-02					
COPPER	21/	24	0.0025 -	0.571	1.04E-01	1.40E-01
1.70E-01	1.70E-01					
LEAD	22/	22	0.0015 -	2.7	1.67E-01	5.40E-01
4.10E-01	4.10E-01					
MANGANESE	24/	24	0.0025 -	7.58	2.20E+00	2.00E+00
3.00E+00	3.00E+00					
MERCURY	8/	24	0.0001 -	0.0023	3.00E-04	5.20E-04
5.50E-04	5.50E-04					
NICKEL	17/	24	0.01 -	0.23	7.50E-02	7.40E-02
1.06E-04	1.06E-01					
VANADIUM	9/	24	0.015 -	0.278	4.80E-02	6.20E-02
7.40E-02	7.40E-02					
ZINC	24/	24	0.0104 -	1.13	2.80E-01	3.30E-01
4.20E-01	4.20E-01					

Notes:

(a) All concentrations reported in mg/L. Concentrations reflect analytical results of unfiltered samples from

all on-site monitoring wells screened in the upper outwash. A sample size less than 24 for inorganics

indicates rejection of sample results by QA/QC review. Data shown here are for MW-1 through MW-3,

MW-5 through MW-8, and MW-10 through MW-14.

(b) One-half the detection limit is used as a proxy concentration for non-detects per USEPA guidance.

(c) Based on student's T-distribution with n-1 degrees of freedom, alpha=0.025 in each tail.

(d) The lesser of the 95% upper bound concentration and the maximum detected concentration.

TABLE 6
CHEMICAL OF INTEREST IN ON-SITE GROUND WATER
LOWER SAND AND GRAVEL
ROSEN SITE
CORTLAND, NEW YORK

95% Upper Bound Chemical(a) Concentration (c)	Frequency of Detection Concentration (d)	Range of Sample Concentrations	Arithmetic Mean Concentration (b)	Standard Deviation
Organics BROMOFORM 0.00079	1/ 3 0.0001	ND - 0.0001	0.00037	0.00023
Inorganics BARIUM 0.57	3/ 3 0.364	0.0521 - 0.364	0.252	0.174
CADMIUM 0.003	1/ 3 0.0012	ND - 0.0012	0.0014	0.0010
COPPER 0.034	2/ 3 0.0261	ND - 0.0261	0.012	0.012
MERCURY 0.00035	1/ 3 0.00028	ND - 0.00028	0.00016	0.00010

Notes:

- (a) All concentrations reported in mg/L. Concentrations reflect analytical results of unfiltered samples from all on-site monitoring wells screened in the lower outwash. (MW-9 AND MW-15).
- (b) One-half the detection limit is used as a proxy concentration for non-detects per USEPA guidance.
- (c) Based on students T-distribution with n-1 degrees of freedom, alpha=0.025 in each tail.
- (d) The lesser of the 95% upper bound concentration and the maximum detected concentration.

TABLE 6
CHEMICAL OF INTEREST IN ON-SITE GROUND WATER
UPPER OUTWASH
ROSEN SITE
CORTLAND, NEW YORK

95% Upper	Frequency	Arithmetic
-----------	-----------	------------

Bound RME Chemical(a) Concentration (c)	of Detection Concentration (d)	Range of Sample Concentrations	Mean Concentration (b)	Standard Deviation
Organics				
1,1-DICHLOROETHANE 0.10	4/ 4 0.093	0.0015 - 0.093	0.031	0.043
1,1-DICHLOROETHENE 0.011	2/ 4 0.011	ND - 0.011	0.0033	0.0052
1,1,1-TRICHLOROETHANE 0.31	4/ 4 0.3	0.016 - 0.3	0.095	0.14
1,2-DICHLOROETHANE 0.0008	1/ 4 0.0008	ND - 0.0008	0.00058	0.00015
1,2-DICHLOROETHANE (total) 0.030	3/ 4 0.029	ND - 0.029	0.0077	0.014
TETRACHLOROETHENE 0.0021	2/ 4 0.002	ND - 0.002	0.00088	0.00075
TRICHLOROETHENE 0.026	4/ 4 0.019	ND - 0.019	0.010	0.010
Inorganics				
ALUMINUM 120.5	4/ 4 105.15	0.368 - 105.15	49.7	44.5
ANTIMONY 0.21	3/ 4 0.18	ND - 0.179	0.11	0.063
ARSENIC 0.04	3/ 4 0.032	ND - 0.03185	0.019	0.014
BARIUM 0.97	4/ 4 0.87	0.0575 - 0.867	0.41	0.35
CADMIUM 0.0018	3/ 4 0.0014	ND - 0.0014	0.00080	0.00061
COBALT 0.077	3/ 4 0.07	ND - 0.06955	0.037	0.025
COPPER 0.26	4/ 4 0.23	0.0302 - 0.2285	0.12	0.086
LEAD 0.98	4/ 4 0.130	0.003 - 0.130	0.28	0.44
MANGANESE 8.17	4/ 4 6.2	0.066 - 6.24	3.4	3.0
NICKEL 0.27	3/ 4 0.23	ND - 0.235	0.13	0.093
VANADIUM 0.16	3/ 4 0.15	ND - 0.1475	0.057	0.063
ZINC 1.03	4/ 4 0.83	0.0378 - 0.834	0.44	0.37

Notes:

- (a) All concentrations reported in mg/L. Concentrations reflect analytical results of unfiltered samples from all off-site downgradient monitoring wells screened in the upper outwash. Data shown here are for MW - 16 through MW - 19.
- (b) One-half the detection limit is used as a proxy concentration for non-detects per USEPA guidance.
- (c) Based on student's T-distribution with n-1 degrees of freedom, alpha = 0.025 in each tail.
- (d) The lesser of the 95% upper bound concentration and the maximum detected concentration.

TABLE 6
CHEMICALS OF INTEREST IN ON-SITE GROUND WATER
UPPER OUTWASH

ROSEN SITE
CORTLAND, NEW YORK

95% Upper Bound Chemical(a) Concentration (c)	RME	Frequency of Detection Concentration (d)	Range of Sample Concentrations	Arithmetic Mean Concentration (b)	Standard Deviation
1,1-DICHLOROETHANE 0.12	0.12	5/ 18	ND - 0.550	0.054	0.14
1,1-DICHLOROETHENE 0.06	0.01	1/ 18	ND - 0.01	0.027	0.066
1,1,1-TRICHLOROETHANE 7.7	7.7	10/ 18	ND - 44	2.6	10.4
1,4-DICHLOROBENZENE 2.1	0.00515	1/ 19	ND - 0.0515	0.96	2.4
2-BUTANONE 0.12	0.083	3/ 17	ND - 0.083	0.053	0.13
2-METHYLNAPHTHALENE 6.3	6.3	2/ 19	ND - 32	2.6	7.5
2-METHYLPHENOL 2.1	0.305	1/ 18	ND - 0.305	0.98	2.4
2-NITROPHENOL 2.1	0.071	1/ 19	ND - 0.071	0.97	2.4
4,4'-DDE 0.038	0.016	1/ 19	ND - 0.016	0.025	0.025
ACENAPHTHENE 4.5	4.5	1/ 19	ND - 20.7	2	5.1
ACENAPHTHALENE 2.3	2.3	1/ 19	ND - 3.23	1.1	2.5
ACETONE 0.14	0.14	11/ 18	ND - 0.253	0.072	0.13
ANTHRACENE 3.8	3.8	1/ 19	ND - 16	1.8	4.2
AROCLOR 1254 1.1	1.1	3/ 19	ND - 5.8	0.49	1.3
AROCLOR 1260 0.41	0.41	1/ 19	ND - 0.61	0.28	0.27
BENZENE 0.05	0.003	2/ 18	ND - 0.003	0.02	0.06
BENZOIC ACID 3.0	0.1	3/ 19	ND - 0.1	1.8	2.5
BENZO(a)ANTHRACENE 4.1	4.1	3/ 19	ND - 17.3	1.9	4.5
BENZO(a)PYRENE		4/ 18	ND - 9.7	1.5	3.2

3.1	3.1						
BENZO(b)FLUORANTHENE		6/	18	ND -	9.1	1.5	3.2
3.1	3.1						
BENZO(g,h,i)PERYLENE		1/	18	ND -	3.1	1.1	2.5
2.4	2.4						
BENZO(k)FLUORANTHENE		5/	18	ND -	7.1	1.3	2.9
2.8	2.8						
BIS(2-ETHYLHEXYL)PHTHALATE		11/	19	ND -	16.7	2.4	4.8
4.7	4.7						
BUTYLBENZYLPHTHALATE		6/	19	ND -	14	1.8	3.8
3.7	3.7						
CHRYSENE		8/	19	ND -	14.7	1.8	4.0
3.8	3.8						
DIBENZOFURAN		1/	19	ND -	20	2	5
4.4	4.4						
DIBENZO(a,h)ANTHRACENE		1/	18	ND -	0.55	1	2.5
2.2	0.55						
DI-n-BUTYLPHTHALATE		6/	19	ND -	24.7	2.2	6.0
5.1	5.1						
ETHYLBENZENE		3/	18	ND -	1.90	0.14	0.44
0.36	0.36						
FLUORANTHENE		6/	19	ND -	43	3.2	9.9
8.0	8.0						
FLUORENE		2/	19	ND -	24	2.2	5.8
5.0	5.0						
INDENO(1,2,3-cd)PYRENE		2/	18	ND -	1.2	1.0	2.5
2.3	1.2						
METHOXYCHLOR		1/	19	ND -	0.066	0.13	0.13
0.19	0.066						
METHYLENE CHLORIDE		2/	18	ND -	0.008	0.021	0.062
0.052	0.008						
NAPHTHALENE		2/	19	ND -	110	6.7	25.1
18.8	18.8						
N-NITROSODIPHENYLAMINE		1/	19	ND -	0.585	0.99	2.4
2.2	0.585						
PHENANTHRENE		5/	19	ND -	97	6.2	22.1
16.9	16.9						
PHENOL		1/	19	ND -	0.14	0.97	2.4
2.1	0.14						
PYRENE		7/	19	ND -	41.7	3.3	9.6
8.0	8.0						
TETRACHLOROETHENE		2/	18	ND -	1.69	0.11	0.40
0.31	0.31						
TOLUENE		6/	18	ND -	27	1.8	6.4
5.0	5.0						
TRICHLOROETHENE		7/	18	ND -	0.012	0.02	0.06
0.05	0.012						
XYLENES		4/	18	ND -	33	2.2	7.8
6.0	6.0						

Inorganics

ALUMINUM		19/	19	4070 -	18900	10009.2	4220.9
12043.7	12043.7						
ANTIMONY		6/	19	ND -	15.2	1.5	3.5
3.2	3.2						
ARSENIC		18/	18	1.9 -	51.4	10.2	11.5
15.9	15.9						
BARIUM		19/	19	19.4 -	291	101.5	76.6
138.4	138.4						
BERYLLIUM		3/	19	ND -	1.1	0.44	0.23

0.55	0.55						
CADMIUM		6/	19	ND -	10.8	1.5	2.6
2.7	2.7						
CHROMIUM		19/	19	6.5 -	169	40.3	45.9
62.5	62.5						
COBALT		18/	19	ND -	15.7	9.5	3.4
11.1	11.1						
COPPER		18/	19	10.6 -	272	51.6	64.0
83.3	83.3						
LEAD		19/	19	8.4 -	1150	103.8	260.4
229.3	229.3						
MANGANESE		19/	19	53.1 -	8020	1552.6	1888.8
2463.0	2453.0						
MERCURY		7/	19	ND -	0.35	0.10	0.11
0.15	0.15						
NICKEL		19/	19	6.5 -	361	59.0	78.1
96.6	96.6						
SILVER		1/	19	ND -	1.10	0.4	0.21
0.50	0.50						
VANADIUM		18/	18	9 -	318	52.4	91.3
97.6	97.6						
ZINC		19/	19	32.2 -	1020	374.0	594.2
660.5	660.5						
CYANIDE		5/	19	ND -	2.1	0.79	0.40
0.98	0.98						

Notes:

(a) All concentrations reported in mg/kg.

A sample size less than 19 indicates rejection of sample results by QA/QC review.

(b) One-half the detection limit is used as a proxy concentration for non-detects per USEPA guidance.

(c) Based on Student's T-distribution with n-1 degrees of freedom, alpha=0.025 in each tail.

(d) The lesser of the 95% upper bound concentration and the maximum detected concentration.

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TABLE 7

POTENTIAL EXPOSURE PATHWAYS

ROSEN SITE
CORTLAND, NEW YORK

Potentially Exposed for	Exposure	Exposure	Exposure	Pathway Selected
Population	Medium	Route	Point	
Evaluation?	Reason for Selection or Exclusion			
Current Workers	Surface Soil	Dermal contact;	On Site	Yes
Work efforts currently occurring at the		Incidental Ingestion		
site require the occasional presence of personnel.				
	Air	Inhalation of dusts	On Site	Yes
Low concentrations of VOCs were detected in air monitoring,				

and the lack of complete site cover allows for potential
generation of dusts especially during dry conditions.

Workers do not wade in the Creek of Tributary.	Surface Water/ Sediments	Dermal Contact	Perplexity Creek and Tributary	No
Potential Trespassers Fencing surrounding the site does not completely eliminate access; hence, trespassers may potentially enter the site and contact chemicals observed in surface soils.	Surface Soils	Dermal contact; Incidental Ingestion	On Site	Yes
Trespassers potentially entering the site may be attracted to Perplexity Creek or its tributary.	Surface Water	Dermal contact	Perplexity Creek and Tributary	Yes
Trespassers potentially entering the site may be attracted to Perplexity Creek or its tributary.	Sediments	Dermal contact	Perplexity Creek and Tributary	Yes
Low concentrations of VOCs were detected in air monitoring, and the lack of complete site cover allows for potential generation of dusts especially during dry conditions.	Air	Inhalation of dusts and vapors	On Site	Yes
Hypothetical Future Future uses of the site may require Excavation Workers construction/excavation activities.	Subsurface Soil	Dermal contact; Incidental Ingestion	On Site	Yes
Low concentrations of VOCs have been observed in air monitoring, and dry conditions, exposure of subsurface soils via excavation, and use of heavy equipment may generate significant amounts of dusts or increase volatilization.	Air	Inhalation of dusts and vapors	On Site	Yes

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TABLE 7
POTENTIAL EXPOSURE PATHWAYS
ROSEN SITE
CORTLAND, NEW YORK

Potentially Exposed for Population Evaluation?	Exposure Medium Reason for Selection or Exclusion	Exposure Route	Exposure Point	Pathway Selected
Hypothetical Future Downgradient most nearby residents are supplied with Off-Site Residents public water. However, constituents of interest have been detected in off-site groundwater.	Ground Water	Ingestion; dermal contact; Inhalation of volatiles	Off-Site Wells	Yes
Low concentrations of VOCs have been observed during air monitoring; and dusts may be transported offsite by prevailing winds.	Air	Inhalation of dusts and vapors	Off-Site Residence	Yes
Hypothetical Future Potential future use of the site may be residential. On-Site Residents	Ground Water	Ingestion; dermal contact, inhalation of volatiles	On-Site Wells	Yes
Potential future use of the site may be residential.	Surface Soil	Dermal contact; Incidental Ingestion	On Site	Yes
Low concentrations of VOCs have been observed in air monitoring, and the site may not be completely covered in the future. Hence, continued volatilization and generation of dusts, especially during dry conditions, may potentially occur.	Air	Inhalation of dusts and vapors	On Site	Yes
Exposure is possible, but as shown for trespassers, risks are negligible, and hence not calculated.	Surface Water/ Sediment	Dermal contact	Perlicity Creek and Tributary	No
Hypothetical Future Potential future use of the site may be industrial/commercial. Commercial/Industrial Worker	Ground Water	Dermal contact Ingestion	On-Site Wells	Yes
Potential future use of the site may be industrial/commercial.	Surface Soil	Dermal contact; incidental ingestion	On Site	Yes
VOCs have been observed in air monitoring, and the site may not be completely covered in the future. Hence, continued volatilization and generation of dusts, especially during dry concentrations, may potentially occur.	Air	Inhalation of dusts and vapors	On Site	Yes

Workers are unlikely to wade	Surface Water/ in the Creek. Sediment	Dermal contact	Perlicity Creek and Tributary	No
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Table 8

Available Toxicity Criteria for Non-Carcinogenic Health Effects of
the Chemicals of Interest (a)

Rosen Site
Cortland, New York

INHALATION		ORAL		
RfC		RfD		
CHEMICAL	(mg/kg-day)		Effect of Concern	Source
(mg/m 3)	Effect of Concern		Source	
1,1-DICHLOROETHANE	1.0E-01	NONE		
5E-01 kidney damage		b		
1,1-DICHLOROETHENE	9.0E-03	liver lesions		b
UR				
1,2-DICHLOROETHANE	ND			
ND				
1,1,1-TRICHLOROETHANE	ND			
ND				
1,2-DICHLOROETHENE (cis-)	1.0E-02	decreased hematocrit and hemoglobin		b
ND				
1,2-DICHLOROETHENE (trans-)	2.0E-02	increased alkaline phosphatase		
ND				
1,4-DICHLOROBENZENE	ND			
8E-1 liver, kidney effects		b		
2-BUTANONE	6.0E-01	NONE		
1.0 decreased birth weight		b		
2-METHYLPHENOL	5.0E-02	decreased body weight; neurotoxicity		
NV				
2-METHYLNAPHTHALENE	ND			
ND				
2-NITROPHENOL	ND			
ND				
4-CHLORO-3-METHYL PHENOL	ND	ND		
ND ND				
ACENAPTHENE	6.0E-02	hepatotoxicity		
ND				
ACENAPHTHALENE	ND			
ND				
ACETONE	1.0E-01	increased liver weight; nephrotoxicity		
ND				
ALUMINUM	ND			
ND				
ANTHRACENE	3.0E-01	NONE		
ND				
ANTIMONY	4.0E-04	increased mortality, altered blood chemistry		
ND				

ARSENIC	3.0E-04	keratosis; hyperpigmentation	
ND			
BARIUM	7.0E-02	increased blood pressure	
5E-04 fetotoxicity		b	
BENZOIC ACID	4.0	NONE	
ND			
BERYLLIUM	5.0E-03	NONE	
ND			
BIS(2-ETHYLHEXYL)PHTHALATE	2.0E-03	increased relative liver weight	
ND			
BROMOFORM	2.0E-02	liver effects	
ND			
BUTYLBENZYLPHTHALATE	2.0E-01	altered liver weight	
ND			
CADMIUM	5.0E-04	Water	renal damage
UR			
	1.0E-03	Food	renal damage
CHLOROETHANE	ND		
10 delayed fetal ossification			
CHLOROFORM	1.0E-02	liver/fatty cysts	
UR			
CHROMIUM (III)	1.0	NONE	
UR			
CHROMIUM (IV)	5.0E-03	NONE	
UR			
COBALT	UR		
ND			
CYANIDE (free)	2.0E-02	decreased body weight; thyroid effects; myelin	
ND		degeneration	
COPPER	ND		
ND			
DIBENZOFURAN	ND		
ND			
DIMETHYLPHTHALATE	10	liver, kidney, and testes effects	b
ND			
Di-n-BUTYLPHTHALATE	1.0E-01	increased mortality	
NV			
Di-n-OCTYLPHTHALATE	0.02	liver, kidney, and testes effects	b
ND			
ETHYLBENZENE	1.0E-01	hepatotoxicity; nephrotoxicity	
1.0 developmental toxicity		b	
FLUORANTHENE	4.0E-02	hematological changes; nephropathy;	
ND			
		increased liver weight	
FLUORENE	4.0E-02	decreased erythrocytes	
ND			
LEAD	ND		
ND			
MANGANESE (food)	1.0E-01	CNS effects	
5E-05 respiratory effects		b	
MANGANESE (water)	5E-03		
5E-05 psychomotor disturbances		b	

See notes on Page 2.

Table 8

Available Toxicity Criteria for Non-Carcinogenic Health Effects of the Chemicals of Interest (a)

Rosen Site
Cortland, New York

INHALATION		ORAL		
RIC		RfD		
(mg/m ³)	CHEMICAL	(mg/kg-day)	Effect of Concern	Source
	MERCURY	3.0E-04	kidney effects	b
3E-04	neurotoxicity		b	
	METHOXYCHLOR	5.0E-03	excessive loss of litters	
NV				
3.0	METHYLENE CHLORIDE	6.0E-02	liver toxicity	
	hepatotoxicity		b	
ND	NAPHTHALENE	ND		
	NICKEL	2.0E-02	decreased weight (body; major organs)	
UR				
ND	PHENANTHRENE	ND		
	PHENOL	6.0E-01	decreased fetal weight	
NV			b	
	PYRENE	3.0E-02	kidney effects	
ND				
	SELENIUM	5.0E-03	clinical selenosis	
ND				
	SILVER	5.0E-03	argyria	
ND				
	TETRACHLOROETHENE	1.0E-02	hepatotoxicity	
ND				
	TRICHLOROETHENE	ND		
ND				
	THALLIUM	8E-05	Increased SCOT and LDH	
ND				
	TOLUENE	2.0E-01	altered weight (liver, kidneys)	
4E-01	CNS effects; eye irritation			
	VANADIUM	7.0E-03	NONE	b
ND				
	XYLENES	2.0	decreased body weight	
ND				
	ZINC	3.0E-01	anemia	b
ND				

Notes:

Sources;

ND = No Data

(a) IRIS, 1994, unless otherwise noted.

NV = Not Verifiable.

(b) USEPA 1994a HEAST.

UR = Under Review.

RfD = Reference Dose.

RIC = Reference Concentration.

CNS = Central Nervous System.

Table 9

Available Toxicity Criteria for Carcinogenic Health Effects of the Chemicals of Interest (a)

Rosen Site
Cortland, New York

INHALATION		ORAL			
URF	HHEG	BF	HHEG		
CHEMICAL		1/(mg/kg-day)	CLASS	Tumor Type	
Source	1/μh/m)	CLASS	Tumor Type		
1,1-DICHLOROETHENE		6.0E-01	C	adrenal tumors	
b	5.0E-05	C	kidney: adenocarcinoma		b
1,1-DICHLOROETHANE		ND	C		
ND					
1,2-DICHLOROETHANE		9.1E-02	B2		
2.6E-05					
1,4-DICHLOROBENZENE		2.4E-02	B2	liver tumors	
b	ND				
2-METHYLPHENOL		ND	C	skin papillomas	
ND					
ARSENIC		1.75	A	skin cancer	
4.3E-03	A	respiratory system tumors			
BENZENE		2.9E-02	A	leukemia	
8.3E-06	A	leukemia			
BENZO(a)PYRENE		7.3E+00	B2	forestomach tumors	
ND					
BENZO(b)FLUORANTHENE		7.3E-01	B2		
c	ND	B2			
BENZO(k)FLUORANTHENE		7.3E-02	B2		
c	ND	B2			
BENZO(a)ANTHRACENE		7.3E-01	B2		
c	ND	B2			
BERYLLIUM		4.3	B2	total tumors	
2.4E-03	B2	lung tumors			
BIS(2-ETHYLENXYL)PHTHALATE		1.4E-02	B2	liver tumors	
ND	B2	lung tumors			
BROMOFORM		7.9E-03	B2	large intestine: adenomatous	
polyps;		1.1E-06		large Intestine: adenocarcinoma polyps;	
adenocarcinoma				adenocarcinoma	
CADMIUM		ND	ND		
1.8E-03	B1	respiratory system tumors			
CARBAZOLE		2.0E-02	B2	liver tumors	
ND					
CHLOROFORM		6.1E-03	B2	kidney tumors	
2.3E-05	B2	liver carcinomas			

CHLOROMETHANE		1.3E-02	C	liver toxicity	
1.8E-06					
CHROMIUM(VI)		ND	ND		
1.2E-02	A	lung tumors			
CHRYSENE		7.3E-03	B2		
c	ND	B2			
4,4-DDE		3,4E-01	B2	liver and thyroid tumors	
c	ND				
DIBENZ(a,h)ANTHRACENE		7.3	B2		
c	ND	B2			
INDENO(1,2,3-cd)PYRENE		0.73	B2		
c		B2			
METHYLENE CHLORIDE (a)		7.5E-03	B2	liver tumors	
4.7E-07**	B2	lung; liver tumors			
NICKEL (REFINERY DUST)		ND	ND		
2.4E-04	A	respiratory system tumors			
N-NITROSODIPHENYLAMINE		4.9E-03	B2	bladder tumors	
ND					
POLYCHLORINATED BIPHENYLS (PCBs)		7.7	B2	liver tumors	
ND					
TETRACHLOROETHENE		5.2E-02	C-B2	liver tumors	
d	5.8E-07	C-B2	lung tumors		d
TRICHLOROETHENE		1.1E-02	C-B2	liver tumors	
d	1.7E-06	C-B2	lung tumors		d

Notes;

ND = No Data.

SF = Slope Factor.

HHEQ Class - Human Health Evaluation Group Classification.

A - Known human carcinogen.

B1,B2 - Probable human carcinogen.

C - Limited evidence of human carcinogen.

D- Not classified.

E - Negative evidence of human carcinogenicity.

URF = Unit Risk Factor.

** URF is derived from a metabolized dose: conversion to SF is inappropriate.

Sources;

(a) IRS, 1094, unless otherwise noted.

(b) USEPA, 1994a HEAST.

(c) Toxicity values relative to benzo(a)pyrene:

1.0 for benzo(a)pyrene and dibenz (a,h) anthracene, 0.1 for benzo(a)anthracene benzo(b)fluoranthene and indeno[1,2,3-od]pyrene,

0.01 for benzo (k) fluoranthene, and 0.001 for Chrysene.

(d) ECAO, 1992

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20-Jan-95

TABLE 10

SUMMARY OF HAZARD INDICES (HIs)

ROSEN SITE

CORTLAND, NEW YORK

Exposure Pathway		CURRENT RECEPTORS		HYPOTHETICAL FUTURE RECEPTORS	
COMMERCIAL/				EXCAVATION	ON-SITE
OFF-SITE	INDUSTRIAL	TRESPASSERS	WORKERS	WORKERS	RESIDENTS
RESIDENTS	WORKERS				
Surface Soil					
Incidental Ingestion		0.07	0.0008	(a)NE	1
NE	0.2				
Dermal Contact		5E-04	1E-04	NE	0.004
NE	1E-04				
Inhalation (c)		0.6	0.1	NE	3
3	2				
Subsurface Soil					
Incidental Ingestion		NE	NE	0.01	NE
NE	NE				
Dermal Contact		NE	NE	2E-04	NE
NE	NE				
Inhalation		NE	NE	0.004	NE
NE	NE				
Ground Water - Upper Outwash					
Ingestion		NE	NE	NE	31
66	9				
Dermal Contact		NE	NE	NE	0.02
0.02	0.005				
Inhalation		NE	NE	NE	1
0.4	NE				
Ground Water - Lower Sand and Gravel					
Ingestion		NE	NE	NE	0.3
NE	0.08				
Dermal Contact		NE	NE	NE	1E-05
NE	1E-06				
Inhalation		NE	NE	NE	NQ
NE	NE				
Surface Water					
Dermal Contact		6E-09	NE	NE	NE
NE	NE				
Sediments					
Dermal Contact		NQ (b)	NE	NE	NE
NE	NE				
Total Site HI		0.7	0.1	0.01	36(d)
69	12				

Notes:

(a) NE = Exposure pathway not evaluated for this receptor.

(b) NQ = Not quantifiable.

(c) Based on predicted maximum annual fence-line concentrations.

(d) Assumes ingestion of upper outwash groundwater. A HI of 4 can be derived assuming ingestion of lower sand and gravel groundwater.

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13-Apr-95

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TABLE 11
SUMMARY OF CANCER RISKS

ROSEN SITE
CORTLAND, NEW YORK

Exposure						
HYPOTHETICAL						
Pathway		CURRENT RECEPTORS			FUTURE	
RECEPTORS						
COMMERCIAL/						
SITE	INDUSTRIAL	EXCAVATION			ON-SITE	OFF-
		TRESPASSERS	WORKERS	WORKERS		
RESIDENTS	WORKERS				RESIDENTS	
Subsurface Soil						
Incidental Ingestion		2E-05	1E-06	(a) NE	3E-04	
NE 3E-05						
Dermal Contact		1E-05	2E-06	NE	1E-04	
NE 5E-05						
Inhalation (c)		6E-06	1E-06	NE	4E-05	
4E-05 2E-05						
Subsurface Soil						
Incidental Ingestion		NE	NE	3E-07	NE	
NE NE						
Dermal Contact		NE	NE	2E-07	NE	
NE NE						
Inhalation		NE	NE	2E-07	NE	
NE NE						
Ground Water - Upper Outwash						
Ingestion		NE	NE	NE	2E-03	
9E-04 5E-04						
Dermal Contact		NE	NE	NE	2E-03	
1E-05 3E-04						
Inhalation		NE	NE	NE	2E-04	
6E-04 NE						
Ground Water - Lower Sand and Gravel						
Ingestion		NE	NE	NE	1E-08	
NE 3E-09						
Dermal Contact		NE	NE	NE	7E-10	
NE 5E-11						
Inhalation		NE	NE	NE	7E-08	
NE NE						
Surface Water						

Dermal Contact		NQ(b)	NE	NE	NE
NE	NE				
Sediments					
Dermal contact		2E-07	NE	NE	NE
NE	NE				
Total		4E-05	3E-06	7E-07	5E-03
2E-03	9E-04				

Notes:

- (a) NE = Exposure Pathway not evaluated for this receptor.
- (b) NQ = Not Quantifiable
- (c) Based on maximum predicted annual fence-line concentrations.

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07-Apr-95

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APPENDIX III

ADMINISTRATIVE RECORD INDEX

ROSEN BROTHERS SCRAP YARD SITE ADMINISTRATIVE RECORD FILE INDEX OF DOCUMENTS

1.0 SITE IDENTIFICATION

1.1 Background - RCRA and other Information

- P. 100001- Report: Engineering Investigation at Inactive
100315 Hazardous Waste Sites in the State of New York
Phase II Investigations, Rosen Site, City of
Cortland Cortland County, N.Y., prepared by
Wehran Engineering, P.C., prepared for New York
State Department of Environmental Conservation
(NYSDEC), Division of Solid and Hazardous Waste,
April 1987.
- P. 100316- Report: Engineering Investigation at Inactive
100559 Hazardous Waste Sites in the State of New York,
Phase II Investigations, Appendix A-D, Rosen Site,
City of Cortland, Cortland County, N.Y., prepared
by Wehran Engineering, P.C., prepared for NYSDEC,
Division of Solid and Hazardous Waste, April 1987.

3.0 REMEDIAL INVESTIGATION

3.1 Sampling and Analysis Plans

- P. 300001- Plan: Sampling and Analysis Plan, Volume 1,
300065 Quality Assurance Project Plan, Remedial

Investigation/Feasibility Study, Rosen Site, Cortland, N.Y., Participating Potentially Responsible Parties, prepared by Blasland & Bouck Engineers, P.C., Final Revision December 1990.

- P. 300066- Plan: Sampling and Analysis Plan, Volume 2, Field
300305 Sampling Plan, Remedial Investigation/Feasibility Study, Rosen Site, Cortland, N.Y., Participating Potentially Responsible Parties, prepared by Blasland & Bouck Engineers, P.C., Final Revision December 1990.

3.2 Sampling and Analysis Data/ Chain of Custody Forms

- P. 300306- Rosen Data Summary, Soil Split Sample Results and
300306 Rinsate, undated.

- P. 300307- Inorganic Chemical Constituents and Physical
300343 Characteristics Sampling, undated.

- P. 300344- Bromofluorobenzene and
300725 Decafluorotriphenylphosphine data package, December 10, 1987. (Attachment: Analytical Report, Incineration Disposal (Sample FOC01), prepared by ETC-Findlay Laboratory, prepared for U.S. EPA, Region II, December 8, 1987.)

- P. 300726- Data Summary Table for Rosen Scrap Yard Remedial
300737 Investigation, prepared by Versar, Inc., prepared for U.S. Environmental Protection Agency, Headquarters, Office of Waste Programs Enforcement, December 11, 1992.

- P. 300738- Sampling Data for trial run of treatment of Pump
300739 Test effluent with DEC discharge standards, prepared by Buck Environmental Laboratories, Inc., prepared for Blasland, Bouck & Lee, Inc., January 18, 1995.

3.3 Work Plans

- P. 300740- Plan: Work Plan for Remedial
300832 Investigation/Feasibility Study, Rosen Site, Cortland, N.Y., Participating Potentially Responsible Parties, prepared by Blasland & Bouck Engineers, P.C., December 1990.

- P. 300833- January 1992 Addendum to the Work Plan, Remedial
300841 Investigation/Feasibility Study, Rosen Site, Cortland, N.Y., Final Revision December 1990.

3.4 Remedial Investigation Reports

- P. 300842- Chapter 7, "Redox Reactions" from Environmental
300849 Chemistry of Soils, written by Mr. Murray B. McBride, undated.

- P. 300850- Chapter (w/ attachments) from the U.S. Geological
300865 Survey Professional Paper #820, United States

Mineral Resources, Manganese, prepared by Mr. John Van N. Dorr, II, Mr. Max D. Crittenden, Jr., and Mr. Ronald G. Worl, undated. (Attachment: Study and Interpretation of the Chemical Characteristics of Natural Water, Third Edition, prepared by the U.S. Geological Survey, Water-Supply Paper 2254, undated.)

- P. 300866- Report: U.S. Geological Survey, Water-Resources
300938 Investigations 78-3, Open-File Report, Quality and Movement of Ground Water in Otter Creek - Dry Creek Basin, Cortland County, N.Y., prepared in cooperation with Cortland County, N.Y., undated.

- P. 300939- Report: U.S. Geological Survey, Water-Resources
300989 Investigations, Report 85-4090, Hydrogeology of the Surficial Outwash Aquifer at Cortland, Cortland County, N.Y., prepared in cooperation with Susquehanna River Basin Commission, undated.

- P. 300990- Report: U.S. Geological Survey, Water Resources
301026 Investigations 78-71, Open File Report, Digital Model Simulation of the Glacial-Outwash Aquifer, Otter Creek-Dry Creek Basin, Cortland County, N.Y., prepared in cooperation with Cortland County, N.Y., undated.

- P. 301027- Report: Summary Report, Final Summary Report for
301249 Soil and Drum Sampling, Rosen Brothers Scrap Yard Site, Cortland, N.Y., prepared by Versar, prepared for the Office of Waste Programs Enforcement, U.S. EPA, Headquarters, June 6, 1991.

- P. 301250- Report: Remedial Investigation Report, Rosen
301581 Site, Cortland, N.Y., Volume 1 of 3, Contributing Potentially Responsible Parties, prepared by Blasland, Bouck & Lee, Inc., Revised May 1994.

- P. 301582- Report: Remedial Investigation Report, Rosen
301897 Site, Cortland, N.Y., Volume 2 of 3, Continuing Potentially Responsible Parties, prepared by Blasland, Bouck & Lee, Inc., Revised May 1994.

- P. 301898- Report: Remedial Investigation Report, Rosen
302543 Site, Cortland, N.Y., Volume 3 of 3, Contributing Potentially Responsible Parties, prepared by Blasland, Bouck & Lee, Inc., Revised May 1994.

- P. 302544- Report: Baseline Risk Assessment, Rogan Site,
302739 Cortland, N.Y., Contributing Potentially Responsible Parties, prepared by Blasland, Bouck Lee, Inc., January 1995.

- P. 302740- Report: Report of Off-Site Soil Gas Modeling for
302755 the Remedial Investigatin/Feasibility Study Oversight at the Rosen Brothers Scrap Yard Site, Cortland, Cortland County, N.Y., prepared by ICF Kaiser Environment & Energy Group, prepared for

U.S. EPA, Region II, August 1995. (Attachments:

(1) Letter to Mr. Mark Granger, Remedial Project Manager, U.S. EPA, Region II, from Ms. Claudine Jones Rafferty, Public Health Specialist II (Environment), Bureau of Environmental Exposure Investigation, New York State Department of Health (NYSDOH), re: Rosen Brothers Site, Report of Off-Site Soil Gas Monitoring, Cortland, Cortland County, January 3, 1996, and (2) Letter to Mr. Mark Granger, Work Assignment Manager, U.S. EPA, Region II, from Mr. Curtis A. Kraemer, Site Manager, ICF Technology, Inc., re: Rosen Brothers Scrap Yard Site RI/FS Oversight, Response to Comments on Off-Site Soil Gas Modeling, March 21, 1996.)

3.5 Correspondence

- P. 302756- Letter to Mr. Mark Granger, Remedial Project
302758 Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Manager, Geology, Blasland & Bouck Engineers, P.C., re: November 1992 Addendum, Rosen Site, November 20, 1992. (Attachment: November 1992 Addendum to the Work Plan, Remedial Investigation/Feasibility Study, Final Revision December 1990, Rosen Site, Cortland N.Y., November 20, 1992.)
- P. 302759- Letter to Mr. Mark Granger, Remedial Project
302785 Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland & Bouck Engineers, P.C., re: October 1993 Addendum, Rosen Site, October 18, 1993. (Attachment: October 1993 Addendum to the Work Plan,, Remedial Investigation/Feasibility Study, Final Revision December 1990, Rosen Site, Cortland, N.Y., October 18, 1993.)
- P. 302786- Letter to Mr. Mark Granger, Remedial Project
302797 Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland, Bouck & Lee, Inc., re: Rosen Site, Aquifer Performance Test, February 24, 1994. (Attachments: (1) Table 1 - Ground-Water Analytical Results, Rosen Site Aquifer Test Program, Cortland, N.Y., January 19, 1995, (2) Table 2 - Summary of Transmissivity and Hydraulic conductivity Pumping Test at Well W-25, Rosen Site, Cortland, N.Y., January 19, 1995, (3) Aquifer Test Program, Draft, Well No. W-25, prepared by Blasland,, Bouck & Lee, Inc., February 27, 1995, and (4) Aquifer Test Program, Draft, Well No. W-26, prepared by Blasland, Bouck & Lee,

Inc., February 27, 1995.)

- P. 302798- Letter to Mr. Mark Granger, Remedial Project
302817 Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland, Bouck & Lee, Inc., re: October 1994 Addendum, Rosen Site, November 7, 1994 (Attachment: Addendum to the Work Plan, Remedial Investigation/Feasibility Study, Rosen Site, Cortland, N.Y., prepared by Blasland, Bouck & Lee, Inc., October 1994.)
- P. 302818- Memorandum to Mr. August Eaton, Division of Water,
302819 NYSDEC, from Mr. David Camp, Division of Hazardous Waste Remediation (DHWR), NYSDEC, re: Request for permission to discharge groundwater generated from a pump test at the Rosen Site, January 5, 1995. (Attachment: Table listing constituents and concentrations detected in the groundwater, May 1991.)
- P. 302820- Memorandum to Mr. David Camp,, DHWR, NYSDEC, from
302821 Mr. Shayne Mitchell, BWFD, NYSDEC, re: Rosen Site, Proposed Short Term Wastewater Discharge, January 11, 1995. (Attachment: Effluent Limitations and Monitoring Requirements, Rosen Site, Cortland, Cortland County, January 11, 1995.)
- P. 302822 Letter to Mr. Mark Granger, Remedial Project
302824 Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland, Bouck & Lee, Inc., re: Aquifer Performance Test, Rosen Site, Cortland, N.Y., January 18, 1995. (Attachment: Attachment 1 - Effluent Limitations and Monitoring Requirements, Rosen Site, Cortland, Cortland County, January 11, 1995.)
- P. 302825- Letter to the Director of various divisions and
302835 regions, from Mr. Elliott P. Laws, Assistant Administrator, U.S. EPA, Headquarters, re: Land Use in the CERCLA Remedy Selection Process, May 25, 1995.
- P. 302836- Letter to Mr. Mark Granger, Remedial Project
302872 Manager, U.S. EPA, Region II, from Mr. David W. Hale, P.E., Associate, Blasland, Bouck & Lee Inc., re: Additional Preliminary Engineering Cost Estimates, Rosen Site - Cortland, N.Y., June 21, 1995. (Attachment: Additional Preliminary Engineering Cost Estimates,, Rosen Site - Cortland, N.Y., June 21, 1995.)
- P. 302873- Letter (w/ attachments) to Mr. Mark Granger,
302908 Remedial Project Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland, Bouck & Lee, Inc., re: Rosen Site, August 1995 Ground-Water Sampling and Analysis Event, December 5, 1995.
- P. 302909- Letter (w/ attachments) Mr. Mark Granger, Remedial
302951 Project Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland, Bouck & Lee,

Inc., re: Rosen Site, December 1995 Ground-Water Sampling and Analysis Event, March 8, 1996.

- P. 302952- Letter to Mr. Mark Granger, Remedial Project
302953 Manager, U.S. EPA, Region II, from Mr. David A. Camp, P.E., Project Engineer, NYSDEC, re: Rosen Site, Cortland County, N.Y., April 4, 1996.
- P. 302954- Letter to Mr. Mark E. Granger, Remedial Project
302956 Manager, U.S. EPA, Region II, from Ms. Nancy E. Gensky, Associate, Blasland, Bouck & Lee, Inc., re: Schedule for Geophysical Investigation Program, Rosen Site - Cortland, N.Y., April 15, 1996. (Attachment: Figure 1 - Proposed Geophysical Survey Area Location Map, Rosen Site, Cortland, N.Y., prepared by Blasland, Bouck & Lee, Inc., undated.)

4.0 FEASIBILITY STUDY

4.6 Correspondence

- P. 400001- Letter to Mr. Mark E. Granger, Remedial Project
400090 Manager, U.S. EPA, Region II, from Mr. David W. Hale, P.E., Associate, Blasland, Bouck & Lee, Inc., re: Rosen Site - Cortland, N.Y., Transmittal of the Sanitary Code, City of Cortland, March 4, 1997. (Attachment: The Sanitary Code of the Cortland County Health District, with amendments, prepared by the Cortland County Board of Health, undated.)

7.0 ENFORCEMENT

7.3 Administrative Orders

- P. 700001- U.S. EPA, Region II, Administrative Order, Index
700013 No., II-CERCLA-80215, In the Matter of Dallas Corporation,, Keystone Consolidated Industries,

Inc., Monarch Machine Tool Company, Respondents, September 15, 1988.
- P. 700014- U.S. EPA, Region II, Administrative Order, Index
700026 No., II-CERCLA-90210, In the Matter of Niagara Mohawk Power Corporation, Respondent, April 4, 1989.
- P. 700027- U.S. EPA, Region II, Administrative Order on
700051 Consent, Index No. II-CERCLA-00204, In the Matter of Dallas Corporation, Monarch Machine Tool Company, Niagara Mohawk Power Corporation, Respondents, December 28, 1989.
- P. 700052- U.S. EPA, Region II, Administrative Order, Index
700069 No., II-CERCLA-00205. In the Matter of Agway, Inc., Cooper Industries, Inc., Keystone Consolidated Industries, Inc., Potter Paint Company, Inc., Harvey M. Rosen, Smith Corona

Corporation, Respondents, February 7, 1990.

7.5 Affidavits

- P. 700070- U.S. District Court, Northern District of N.Y.,
700231 Cooper Industries, Inc., et al., Plaintiffs, vs.
Agway, Inc., at al., Defendants, Deposition of Mr.
R. Michael Scott, Volumes 1-4, prepared by
Precision Reporters, Inc., October 12, 1992.
(Note: This document is CONFIDENTIAL. It is
located at the U.S. EPA Superfund Records Center,
290 Broadway, 18th Floor, N.Y., N.Y. 10007-1866).
- P. 700232- U.S. District Court, Northern District of N.Y.,
700446 Cooper Industries, Inc., at al., Plaintiffs, vs.
Agway, Inc., at al., Defendants, Deposition of Mr.
Carl Edward Kimbrough, Volumes 1-2., prepared by
Precision Reporters, Inc., October 21, 1992.
(Note: This document is CONFIDENTIAL. It is
located at the U.S. EPA Superfund Records Center,
290 Broadway, 18th Floor, N.Y., N.Y. 10007-1866).
- P. 700447- U.S. District Court, Northern District of N.Y.,
700514 Cooper Industries, Inc., at al., Plaintiffs, vs.
Agway, Inc., at al., Defendants, Deposition of Mr.
Dennis M. Hollenbeck, Volumes 1-2, prepared by
Precision Reporters, Inc., November 17, 1992.
(Note: This document is CONFIDENTIAL. It is
located at the U.S. EPA Superfund Records Center,
290 Broadway, 18th Floor, N.Y., N.Y. 10007-1866).
- P. 700515- U.S. District Court, Northern District of N.Y.,
701202 Cooper Industries, Inc., et al., Plaintiffs, vs.
Agway, Inc., et al., Defendants, Deposition of Mr.
Derl Ross, Volumes 1-3, prepared by Precision
Reporters, Inc., March 23, 1993. (Note: This
document is CONFIDENTIAL. It is located at the
U.S. EPA Superfund Records Center, 290 Broadway,
18th Floor, N.Y., N.Y. 10007-1866).
- P. 701203- U.S. District Court, Northern District of N.Y.,
701234 Cooper Industries, Inc., Plaintiffs, vs. Agway,
Inc., Defendants, Deposition of Mr. William E.
Bondarenko, prepared by Precision Reporters, Inc.,
May 5, 1994. (Note: This document is
CONFIDENTIAL. It is located at the U.S. EPA
Superfund Records Center, 290 Broadway, 18th
Floor, N.Y., N.Y. 10007-1866).
- P. 701235- U.S. District Court, Northern District of N.Y.,
701494 Cooper Industries, Inc., et al., Plaintiffs, vs.
Agway, Inc., et al., Defendants, Deposition of Mr.
Philip Rosen, Volumes 1-5, prepared by Precision
Reporters, Inc., May 23, 1994. (Note: This
document is CONFIDENTIAL. It is located at the
U.S. EPA Superfund Records Center, 290 Broadway,
18th Floor, N.Y., N.Y. 10007-1866).
- P. 701495- U.S. District Court, Northern District of N.Y.,

701546 Cooper Industries, Inc., et al., Plaintiffs, vs. Agway, Inc., et al., Defendants, Deposition of Mr. Glenn E. Matoon, prepared by Precision Reporters, Inc., December 12, 1994. (Note: This document is CONFIDENTIAL. It is located at the U.S. EPA Superfund Records Center, 290 Broadway, 18th Floor, N.Y., N.Y. 10007-1866).

9.0 NATURAL RESOURCE TRUSTEES

9.4 Correspondence

- P. 900001- Letter to Mr. Mark Granger, Remedial Project
900002 Manager, U.S. EPA, Region II, from Mr. Todd S. Miller, U.S. Department of the Interior, re: Request for Information regarding the extent of the glaciolacustrine confining layer in the Cortland aquifer at the Rosen Superfund site, January 13, 1994. (Attachment: Figure 2 - Site Map, Rosen Site, Cortland, N.Y., prepared by Blasland & Bouck Engineers, P.C., undated.)
- P. 900003- Letter to Mr. Mark Granger, Remedial Project
900044 Manager, U.S. EPA, Region II, from Mr. Todd S. Miller, U.S. Department of the Interior, re: Results of a particle-tracking analyses for the Rosen Superfund site, February 24, 1994. (Attachment: Groundwater Path Lines from the Rosen Superfund Site, Cortland, N.Y., prepared by Mr. Todd S. Miller, undated.)

10.0 PUBLIC PARTICIPATION

10.2 Community Relations Plans

- P. 1000001- Plan: Revised Community Relations Plan, Rosen
1000038 Brothers Site. Cortland, N.Y., prepared by Booz, Allen & Hamilton, prepared for the Office of Waste Programs Enforcement, U.S. EPA, Headquarters, May 24, 1991.

10.6 Facts Sheets and Press Releases

- P. 1000039- Quick Reference Fact Sheet: Presumptive Remedy for
1000053 CERCIA Municipal Landfill Sites, prepared by U.S. EPA, Region II, September 1993.

APPENDIX IV

STATE LETTER OF
CONCURRENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York 12233-7010

<IMG SRC 98006M8

FEB 1 1 1998

Mr. Richard Caspe
Director
Emergency & Remedial Response Div.
U.S. Environmental Protection Agency
Region II
290 Broadway - 19th Floor
New York, New York 10007

Dear Mr. Caspe:

Re: Rosen Site, Cortland County, N.Y.,
Site No. 7-12-004

The New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) have reviewed the Record of Decision (ROD) dated January 1998 for the above-referenced site. The selected remedy consists of the excavation of soils contaminated with elevated levels of PCBs, the excavation of soils contaminated with elevated levels of Trichloroethane (TCA), capping of the cooling pond disposal area consistent with the requirements of 6 NYCCR Part 360, a surface cover over the remainder of the site, and natural attenuation of the groundwater contamination. The excavated soil with PCB concentrations above 50 ppm will be disposed of off site. Those soils with PCBs below 50 ppm will be consolidated into the cooling pond area. All excavated TCA-contaminated soils will be disposed of off site or treated and disposed of on site. The remedy also includes a long-term groundwater monitoring program.

The NYSDEC and NYSDOH concur with the selected remedy listed in the ROD. If you have any questions, please contact Robert W. Schick, of my staff, at (518) 457-4343.

APPENDIX V

RESPONSIVENESS
SUMMARY

RESPONSIVENESS SUMMARY
FOR THE
ROSEN BROTHERS SUPERFUND SITE
CITY OF CORTLAND, CORTLAND COUNTY, NEW YORK

INTRODUCTION

This Responsiveness Summary provides a summary of citizens' comments and concerns received during the public comment period related to the remedial investigation and feasibility study (RI/FS) and Proposed Plan for the Rosen Brothers Site (the "Site") and the U.S. Environmental Protection Agency's (EPA's) and the New York State Department of Environmental Conservation's (NYSDEC's) responses to those comments and concerns. All comments summarized in this document have been considered in EPA's and NYSDEC's final decision in the selection of a remedial alternative to address the contamination at the Site.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The RI/FS, which describes the nature and extent of the contamination at and emanating from the Site and evaluates remedial alternatives to address this contamination, and the Proposed Plan, which identified EPA's and NYSDEC's preferred remedy and the basis for that preference, were made available to the public in both the Administrative Record and information repositories maintained at the EPA Docket Room in the Region II New York City office and at the City of Cortland Free Library located at 32 Church Street, Cortland, New York. Notices of availability of these documents were published in the Cortland Standard on November 17, 1997. A public comment period was held from November 17, 1997 through January 16, 1998 to provide interested parties with the opportunity to comment on the RI/FS and Proposed Plan. A public meeting was held on December 9, 1997 at the New York State Grange Building in Cortland, New York to inform local officials and interested citizens about the Superfund process, to review planned remedial activities at the Site, to discuss and receive comments on the Proposed Plan, and to respond to questions from area residents and other interested parties. Approximately 25 people, consisting of local businessmen, residents, representatives of the media, and state and local government officials, attended the public meeting.

The public comment period originally ran from November 17, 1997 through December 17, 1997. In response to a request for an extension of the comment period, it was extended thirty days to January 16, 1998.

OVERVIEW

The public, generally, supports the preferred remedy, which includes the excavation, treatment, and disposal of the contaminated soils in four hot-spot areas of the Site, installation of a cap on the former cooling pond, installation of a site-wide surface cover, and natural attenuation of residual groundwater contamination.

The public's concerns, which relate to the groundwater contamination, treatment alternatives, community acceptance, flexibility of the remedy, nature of the site-wide surface cover, groundwater monitoring program, and institutional controls, are summarized below.

SUMMARY OF WRITTEN AND ORAL COMMENTS AND RESPONSES
CONCERNING THE ROSEN BROTHERS SUPERFUND SITE

The following summarizes the oral and written comments received by EPA during the public comment period and EPA's responses.

Groundwater Contamination

Comment #1: A commenter asked whether the contamination in the groundwater threatens downgradient private wells. The commenter also asked whether the contaminated groundwater leaves toxic elements behind in its path and what effect the contaminated groundwater has on the downgradient Tioghnioa River.

Response #1: No private wells are located downgradient of the Site; all residences within the City of Cortland, including downgradient residences, utilize city water. By the time the groundwater reaches the river, the contaminants have either been diluted, dispersed, or degraded; the contaminated groundwater does not leave substantial toxic residues along its path. Removal of the source of contamination, in combination with continued dilution, dispersion, and degradation of the contaminants, will eventually eliminate the groundwater contamination.

Comment #2: A commenter asked if there was any possibility that hazardous chemicals would be carried off-site when there are fluctuations in the groundwater, especially in the vicinity of the former cooling pond.

Response #2: A thorough investigation of the former cooling pond itself did not locate any hazardous substances contributing to groundwater contamination (the wastes disposed of in the former cooling pond consist of, primarily, construction debris and, to a lesser extent, municipal wastes). Contaminated groundwater was, however, detected immediately

downgradient of the former cooling pond; the source of this groundwater contamination is attributable to a contaminated soil hot spot located outside of the cooling pond. The selected remedy will remove the source of this contaminant hot spot (as well as another one located in a different portion of the site). Once the two contaminant hot spots are removed, they will no longer be a source of groundwater contamination. Further, as is noted in Response #1 above, dilution, dispersion, and degradation of the contaminants will eventually eliminate the groundwater contamination.

Comment #3: A commenter asked if EPA would set goals for the reduction of levels of contamination in the groundwater if natural attenuation was part of the selected remedy.

Response #3: Whether the contaminated groundwater is extracted and treated or natural attenuation is utilized, the cleanup goals for the groundwater are the same-state and federal groundwater standards. As part of a long-term groundwater monitoring program, sampling will be conducted in order to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment.

Comment #4: Experience at other sites has shown that natural attenuation of chlorinated organics can take several decades, even under favorable conditions. If additional source areas remain and/or unfavorable conditions exist in the groundwater, then natural attenuation may be unacceptably slow. To reduce the uncertainty in the long-term effectiveness of the remedy, there must be an ongoing evaluation of the trends in contaminant concentrations and plume geometry from a robust groundwater monitoring network. It is proposed that EPA install additional monitoring wells during the design phase to strengthen the groundwater monitoring network. This will help identify any areas which are not degrading in a timely fashion, and, perhaps, identify any remaining source areas. In addition, during and after the implementation of the hot spot soil removal, EPA should conduct groundwater monitoring at sufficiently frequent intervals.

Response #4: The removal of the contaminated soil source areas, extremely high groundwater flow, and the presence of conditions favorable to contaminant degradation, should lead to timely groundwater restoration via natural attenuation in about 10 years. Long-term monitoring of the groundwater will evaluate the remedy's effectiveness. The exact frequency, location, and parameters of the groundwater monitoring will be

determined during the remedial design. Monitoring will include a network of groundwater monitoring wells; new monitoring wells will be installed, if necessary. Sampling will be conducted in order to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment.

Preferred Remedy

Comment #5: A commenter stated that the Proposed Plan lacks specific details related to the nature of the surface cover for the Site and the groundwater monitoring program.

Response #5: As potential risks remain even after the excavation of the soil contaminant hot spots, a surface cover (e.g., asphalt, soil, crushed stone, etc.) will be placed over a large portion of the Site to prevent exposure to residual levels of contaminants in site soils. All of the cover materials that are being considered provide the same level of protection. It is our understanding there is local interest in developing the Site and that a decision may be made within the next few months. Deferring the selection of the nature of the cover material until the design phase will ensure that it will be compatible with the future use of the property

Long-term monitoring will be utilized to evaluate the selected remedy's effectiveness. At this time, EPA has developed only a conceptual plan for the groundwater monitoring program. Additional data and information need to be collected during the design phase to optimally identify the frequency and parameters of the groundwater monitoring.

Surface Cover

Comment #6: A commenter indicated that not all of the possible surface cover materials are equally desirable from the community's point of view. An asphalt cover, for example, might limit many of the possibilities for the property in the future. To facilitate site redevelopment, the site-wide surface cover should not be designed for any specific use. Instead, the design should be flexible enough to accommodate a variety of uses or tenants. A flexible cover approach would allow, for example, paving some areas and utilizing other materials for other areas. If clean fill is used, it should be a minimum of two feet thick (a thicker cover would have greater durability, would be less likely to erode or be accidentally breached, and would better support multiple uses). A geotextile marker layer at the base of the cover appears to be an excellent way to ensure that future users of the Site know when they have reached the base of the cover. Further, a cover maintenance manual should be developed during the design phase. At a minimum, the manual should address cover maintenance and repairs, minimum health and safety measures required of all contractors building on and/or modifying the cover (i.e., foundation work, underground utilities, paving, landscaping, etc.), and disposal options for any excavated soils. Ideally, it should also provide a description of the institutional controls that will be in place to protect

the integrity of the cover. The manual should be made available to prospective tenants, local governments, and anyone who plans to do construction work at the Site.

The commenter also expressed a desire that the community be involved in the cover material selection process.

Response #6: EPA agrees that the cover configuration needs to remain flexible to ensure it is appropriate and compatible with the redevelopment of the property. A marker layer is envisioned as being a component of every cover configuration. A cover maintenance manual will be formulated during the remedial design phase and will be available to the community through the Site information repository.

The community's concerns are important to EPA. As part of EPA's ongoing community relations program, during the remedial design, when a preferred cover material is identified, EPA will seek input from the community.

Alternatives Evaluation

Comment #7: Several commenters wanted to know why only four alternatives were evaluated in the Proposed Plan in light of the fact that two of the alternatives-no action and institutional controls-are not viable and the "groundwater extraction and treatment" alternative appears to be unreasonable given its cost.

Response #7: The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. While the "institutional controls" alternative does not include any physical remedial measures that address the problem of contamination at the Site and the "groundwater extraction and treatment alternative" is more costly than the alternative that was selected, EPA considered these three "action" alternatives to be viable and appropriate for consideration. Other alternatives were considered in the FS but were eliminated because they were either not effective or their cost was significantly greater than alternatives that could provide the same level of protection for considerably less cost. The selected alternative (contaminated soil hot spot excavation and disposal, installation of a cap on the former cooling pond, a site-wide surface cover, and groundwater natural attenuation) will provide the best balance of trade offs among the alternatives with respect to the evaluating criteria.

Comment #8: A commenter expressed concern about the acceptability of Alternative 3 (soil hot spot excavation, former cooling pond cap, site-wide surface cover, and natural

attenuation of residual groundwater contamination) because in order to remove the contaminant hot spots, the excavation areas would have to be secured 24 hours a day to prevent exposure to wildlife and trespassers. The commenter also stated that, for the groundwater monitoring program to be efficient, an annual review of the Site would be more sufficient than every 5 years.

Response #8: Under Alternative 3, to prevent exposure of wildlife and trespassers to hazardous substances during the remediation of the Site, security measures will be employed at the Site, as necessary, such as fencing and security guards.

As part of a long-term groundwater monitoring program, samples from upgradient, on-site, and downgradient groundwater monitoring wells will be collected and analyzed semi-annually in order to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment. The effectiveness of the selected remedy will be assessed on an ongoing basis as data are collected. In addition, to comply with the requirements of the Superfund statute and regulations, the remedy for the Site will be formally reviewed at least once every five years to assess whether it is being adequately protective of public health and the environment. If justified by the ongoing assessments or the 5-year reviews, additional remedial actions may be implemented to remove or treat the remaining contaminants.

Comment #9: A commenter suggested that it would have been useful to include excavation of the entire residually-contaminated soils as another alternative.

Response #9: The excavation of all of the residually-contaminated soils, which would involve excavating to a depth of six feet across 17 acres of the Site, was evaluated in the FS. This alternative was, however, screened out on the basis of cost--a site-wide surface cover would be similarly protective as excavating all of the residually-contaminated soils, but would be significantly less expensive.

Former Cooling Pond

Comment #10: A commenter asked why the former cooling pond needs to be capped.

Response #10: While an investigation of the 3-acre former cooling pond did not locate any hazardous substances, since it was used for the disposal of construction and demolition

debris and municipal refuse, it must be closed in accordance with New York State landfill closure requirements.

Comment #11: A commenter wanted to know what would be disposed of in the former cooling pond prior to capping.

Response #11: Only excavated soils characterized as nonhazardous and nonhazardous debris that is located on the surface of the areas where the Site-wide surface cover will be installed will be consolidated onto the former cooling pond prior to capping.

Comment #12: A commenter wanted to know what is the nature of the cap proposed for the former cooling pond.

Response #12: The cap over the former cooling pond must meet the requirements of New York State 6 NYCRR Part 360 regulations. Prior to construction of the cap, the consolidated soils, nonhazardous debris, and existing fill materials will be regraded and compacted to provide a stable foundation and to promote runoff. The first layer of the cap will be an impermeable layer, made of high-density polyethylene or clay. A 2-foot soil barrier protection layer will be installed on top of the impermeable layer. Six inches of top soil and vegetation will be installed on top of the barrier protection layer.

Institutional Controls

Comment #13: A commenter asked whether there would be any mechanisms in place to preclude the drilling of wells at or downgradient of the Site.

Response #13: The remedy includes taking steps to secure institutional controls, such as deed restrictions and contractual agreements, as well as local ordinances, laws, or other government action, for the purpose of, among other things, restricting the installation and use of groundwater wells at and downgradient of the Site.

Comment #14: A commenter asked at what point in process would the institutional controls be implemented and who would take the lead in implementing the institutional controls.

Response #14: Institutional controls are usually put into place following the completion of the construction of the remedy. While it is EPA's responsibility to ensure that institutional controls are put into place, if the potentially responsible parties (PRPs) agree to perform the design and construction of the selected remedy, they, most likely, would take an active role in securing the necessary institutional controls.

Comment #15: A commenter asked if Alternative 3 (contaminated soil hot spot excavation and disposal, installation of a cap on the former cooling pond, a site-wide surface cover, and groundwater natural attenuation) is selected, does it preclude the possibility of the excavation of soils underlying the surface cover, as long as they are treated as hazardous substances.

Response #15: The institutional controls component of the remedy is designed to restrict, though not necessarily preclude, the excavation of soils underlying the site-wide surface cover. For example, in the event of the construction of structures on-site, any excavated soils would be tested for hazardous substances (or may be simply assumed to be

hazardous) and disposed of appropriately. A geotextile marker layer at the base of the cover will ensure that future users of the Site know when they have reached the base of the cover.

Comment #16: Because this is a site for which redevelopment is expected, the arrangements that will govern what happens at the Site after the remedy has been implemented are more crucial than at most other Superfund sites. Accordingly, the necessary institutional controls and regulatory arrangements need to be explicitly spelled out at the earliest possible date, and the community should be involved in the process. Experience shows that over the long run, institutional controls are not always honored, therefore, efforts need to be made to preserve the knowledge about the controls. Important areas that need to be addressed include: permit restrictions related to the installation of groundwater wells; deed restrictions for property(ies) above the cover, identification of the various governmental, regulatory, and private entities which will be involved with the Site and their respective roles and responsibilities; development and maintenance of a "cover integrity map" which will identify all the areas in which the site-wide cover has been removed, modified, built over, repaired, etc. and which would serve as a permanent reference for regulators and contractors intending to do work at the Site. The cover maintenance manual should be placed in local libraries, attached to the land title records, and distributed to local governmental agencies.

Response #16: Deed restrictions and contractual agreements and/or local ordinances and laws will be employed to restrict the installation and use of groundwater wells at and downgradient of the Site, restrict excavation or other activities which could affect the integrity of the cap/site-wide surface cover, and restrict residential use of the property in order to reduce potential exposure to site-related contaminants. While it is EPA's responsibility to ensure that institutional controls are put into place, if the PRPs agree to perform the design and construction of the selected remedy, they, most likely, will take an active role in securing the necessary institutional controls. Nevertheless, EPA will ensure that the necessary institutional controls are scoped out as early as possible and that the controls that are put into place are properly maintained. EPA will consider the suggestions related to the development and maintenance of a "cover integrity map" and will make sure that the cover maintenance manual is placed into the local repository and is made available to all that need access to it.

Potentially Responsible Parties

Comment #17: A commenter wanted to know if the PRPs would be responsible for any additional cleanup costs should additional soil hot spots be identified in the future.

Response #17: Yes, the PRPs are responsible for financing or performing all remediation deemed necessary for the Site, even after the Site is deleted from the Superfund National Priorities List.

Fencing Around the Site

Comment #18: A commenter asked whether or not the property will be fenced once the remediation is completed.

Response #18: The property is currently fenced and will remain fenced until the site-wide cover is in place. In addition, to protect the integrity of the cap, it is anticipated that a fence will be constructed around the former cooling pond.

Additional Hot Spots

Comment #19: A commenter asked if EPA was confident that there are no other possible hot spots on the Site.

Response #19: As part of the RI, over 60 soil samples were collected and analyzed. Consequently, EPA believes that the Site has been adequately characterized. The possibility of the existence of additional hot spots is unlikely. However, if additional sources of contamination are detected in the future, they will be considered for remediation, as appropriate.

Perplexity Creek

Comment #20: A commenter asked how the former cooling pond was going to be remediated to ensure that it does not negatively impact the adjacent Perplexity Creek tributary (i.e., erosion).

Response #20: Appropriate erosion control measures, such as rip rap, will be used to protect the integrity of the cap on the former cooling pond and minimize impacts to Perplexity Creek.

Superfund Process

Comment #21: A commenter wanted to know if EPA intends to gather any additional information prior to making a final decision in the ROD.

Response #21: Other than the public comments on the RI/FS reports and the Proposed Plan, EPA did not intend to obtain any additional information prior to remedy selection.

Comment #22: A commenter expressed concern that the public comment period was being conducted prior to the signing of the ROD, since the public might have post-ROD concerns or comments.

Response #22: The purpose of the public comment period prior to the selection of a remedy for this Site is to solicit public comment on the proposed remedy. After considering the public's comments on the RI/FS reports and the Proposed Plan, EPA will select a remedy for the Site. Public participation will not, however, end at this point. Throughout the design and construction of the selected remedy and during long-term monitoring, EPA will continue to keep the public informed about site activities and encourage future comments and inquiries.

APPENDIX V-a

RESPONSIVENESS SUMMARY

LETTERS SUBMITTED DURING THE PUBLIC COMMENT PERIOD

Disposal
Safety
Incorporated

To: Mark Granger, USEPA RPM
From: Steven Amter

Date: January 15, 1998

Subject: Comments on USEPA's Proposed Plan

Jamie Dangler and Larry Ashley of CURB have asked me to forward to you these comments on EPA's Proposed Plan.

Natural Attenuation of Ground Water

The proposed remedy relies on excavation of a few identified contaminant source areas followed by natural attenuation of the ground water. This is a long term process that relies upon in situ mechanisms of biodegradation, chemical degradation, volatilization, and other natural mechanisms to reduce contaminant concentrations to applicable standards.

Experience at other sites has shown that for chlorinated hydrocarbon contaminants, this process can take several decades even under favorable circumstances. If unaddressed source areas remain after the planned excavation, or unfavorable chemical conditions exist in the ground water, then natural attenuation will be unacceptably slow and the remedy will fail. Although there is a low probability of significant source areas remaining within the shallow soil, given the high density of shallow soil samples, the same confidence is not justified at greater depths where monitoring wells and other data points are widely spaced.

To reduce the uncertainty in the long-term effectiveness of the remedy, there must be an on-going evaluation of the trends in contaminant concentrations and plume geometry from a robust ground-water monitoring network. We suggest the following measures:

- The ground-water monitoring network should be strengthened by additional wells installed during the design phase. This will help identify those areas which are and those which are not degrading in a timely fashion, and better identify possible remaining source areas. At a minimum, there needs to be an additional well cluster along Huntington Street east of the 18/19/20 cluster.

1 A review of TCE/DCE and TCA/DCA ratios and available dissolved oxygen data suggest that degradation of chlorinated contaminants (by anaerobic dechlorination) is occurring most efficiently in area of the plume that are downgradient of the anoxic water sources (e.g., the cooling pond and/or the former city disposal area).

1660 L Street NW, Suite 510
Washington, DC 20036
(202) 293-3993

CURB, January 15, 1998
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page

- During and after implementation of the remedy, there needs to be ground-water monitoring at sufficiently frequent intervals. On page 4-8, the Feasibility Study Report (but not the Proposed Plan) proposed the following schedule, which seems acceptable:

Sampling, followed by an evaluation to determine the effectiveness of natural attenuation, would be performed on a semi-annual basis for a period of up to ten years. Assuming successful natural attenuation with levels approaching [remedial goals] for the Site,

the frequency of monitoring the natural attenuation would be reduced to an annual basis for the next five years, and then every five years from year 16 through year 30.

Of course, if the PRPs perform these evaluations, the results need to be submitted to the EPA.

Surface Cover

Since the Proposed Plan does not provide design details, at this time we can only make general comments about the site-wide cover. We reserve the right to make comments on the specific design as details become available. To facilitate site redevelopment, we feel that the following elements are crucial for any final cover design:

- It should not be designed for any specific use or tenant; instead, the design should be flexible enough to accommodate a variety of uses or tenants by subsequent modification.
- A site-wide cover consisting totally of asphalt is unacceptable. However, a flexible cover approach would allow paving over sub-areas.
- With respect to cover design, thicker is better. We believe that a minimum of two feet of clean soil or equivalent is required. Although we understand that a thicker cover may not provide additional reductions in risk per se (theoretically, a one-inch soil cover, unbreached, provides the same level of protection as a five-foot cover), on a practical basis a thicker cover has greater durability, is less likely to erode or be accidentally breached, and better supports multiple uses.
- A geotextile marker layer at the base of the cover appears to be an excellent way to ensure that future users of the site know when they have reached the base of the cover.
- A guide for cover modification and maintenance should be written during the design phase with input from the cover designers. The guide should be made available to prospective tenants, local governments, and anyone who plans to do construction work at the site. At a minimum, it should address cover maintenance and repairs, minimum health and safety measures required of all contractors building on and/or modifying the cover (i.e., foundation work, underground utilities, paving over, landscaping, etc.), and disposal options for excavated soils. Ideally, it should also provide a useful description of the institutional

CURB, January 15, 1998
page 3

requirements that must be navigated by anyone doing work at the site that could compromise the integrity of the cover.

Institutional Controls and Arrangements

Because this is a site for which redevelopment is planned, the arrangements that will govern what happens at the site after the remedy has been implemented are more crucial than at many other Superfund sites. Accordingly, the necessary institutional controls and regulatory arrangements need to be explicitly spelled out at the earliest possible date, and the community should be involved in the process. Experience shows that over the long run institutional controls

are not always honored, therefore efforts need to be made to preserve the knowledge about the controls. Important areas that need to be addressed include:

- Permit restrictions for ground-water wells in the plume area.
- Deed restrictions for property(ies) above the cover.
- Identification of the various governmental, regulatory, and private entities which will be involved with the site, their respective roles, and the institutional arrangements among them.
It will be particularly important to spell out who will maintain the site-wide cover and which regulatory agency will provide the oversight to ensure the continued integrity of the cover, particularly during and after construction or modification by tenants.
- The development and upkeep of a "cover integrity map." This map should be continuously upgraded to identify all the areas in which the site-wide cover has been removed, modified, built over, repaired, etc. It would serve as a permanent reference for regulators and contractors intending to do work at the site.
- A non-technical version of the "Modification and Maintenance Guide" should be placed in local libraries, attached to the land title records, and distributed to local governmental agencies.

Notice

This document has been prepared solely for the guidance of CURB Pollution in interpreting information available to them. Other users should satisfy themselves independently as to fact and conclusions contained herein. In particular, such users should refer to original sources of information rather than this memo. This document is not intended for use in any real estate or other transactions, nor as a public health recommendation, and should not be used or relied upon for such purposes.

SUSAN HAJDA BROCK
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BY FACSIMILE AND MAIL

December 17, 1997

Mark Granger, Project Manager
Central NY Remediation Section
ERRD, 20th Floor
U.S. Environmental Protection Agency
290 Broadway
New York, NY 10007-1866

Re: Rosen Site Proposed Plan

Dear Mark:

At the December 9 public meeting on the Rosen Site's Proposed Plan, members of CURB requested that the public have the opportunity to comment during the Remedial Design phase. They have particular concerns about the nature of the site-wide surface cover and groundwater monitoring program.

The City of Cortland supports CURB's request. The City agrees with EPA that the details of the cover and monitoring should be specified during the Remedial Design phases to maintain flexibility. However, there should be a formal mechanism for public input on these significant issues before EPA makes its decisions. The City urges EPA to make a commitment to solicit and receive public comment during the Remedial Design phase.

APPENDIX V-b

RESPONSIVENESS SUMMARY

PUBLIC MEETING TRANSCRIPT

1 UNITED STATES
2 ENVIRONMENTAL PROTECTION AGENCY
3 - - - - -
4 ROSEN BROTHERS SUPERFUND SITE
5 PUBLIC MEETING
6 ON
7 ENVIRONMENTAL PROTECTION AGENCY'S
8 PROPOSED CLEANUP

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13 Held at the New York State Grange Building,
14 100 Grange Place, Cortland, New York,
15 on the 9th day of December, 1997,
16 commencing at 7:00 PH.

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22 PDQ COURT REPORTERS
MICHELE L. RICE
23 Shorthand Reporter, Notary Public
4815 Barry Hollow Road
24 Marathon, New York 13803
(607) 849-6884/(800) 528-9013

1 A P P E A R A N C E S

2

3 ABN RYCHLENSKI; Community Relations
4 Coordinator, US Environmental Protection Agency.

5

6 JOEL SINGERMAN; Chief, Central New York
7 Superfund Section, US Environmental Protection Agency.

8

9 MARK GRANGER; Project Manager, US
10 Enviromental Protection Agency.

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12 * * * * *

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Public Meeting

1 MS. RYCHLENSKI: Good evening.
2 Thanks for coming out tonight. My name is
3 Ann Rychlenski. I'm community -- I'm a
4 Community Relations Coordinator with the
5 US Environmental Protection Agency. And I'm
6 sure, as most of you know, this meeting here
7 tonight is to discuss EPA's Proposed Plan
8 for the cleanup of the Rosen Brothers site
9 here in Cortland.
10 Before I move onto a couple little
11 matters of business, I just want to
12 introduce my colleagues that are here with
13 me this evening who will be doing the
14 presentations.
15 All the way over to my left is Joel

16 Singerman (indicating). And Joel's a Chief
17 of the Central New York Superfund branch at
18 EPA. He's going to be talking to you about
19 how the Superfund process works, what it's
20 all about.

21 And right here to my immediate left
22 is Mark Granger (indicating). I think a lot
23 of you here know Mark. He's been around a
24 long time with this site. Mark's the
PDQ COURT REPORTERS

Public Meeting

1 Project Manager of the Rosen site. He's
2 going to be talking about what we found in
3 our site investigations, basically what we
4 found, how much of it's there, where it's at
5 and what we propose to do with it.

6 So, that's basically what the line of
7 business is here tonight.

8 I want to acknowledge one person
9 who's here tonight from DEC, David Camp.
10 Just say hi. New York State DEC. In case
11 there are any State-related questions that
12 come up, I'm sure Dave would be happy to
13 answer them.

14 We have a few things that we do here
15 at meetings that deal with Proposed Plans.
16 As you can see we have a stenographer here
17 tonight, and that's not usual at most public
18 meetings. And the reason for the

19 stenographer is because this is, indeed, a
20 legal record that is being taken, because
21 public comment is being taken tonight, and
22 public comment is very, very important in
23 the Superfund process, because, as Mark will
24 talk about a little later on, community
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1 acceptance of our Proposed Plan is one of
2 the criteria by which we make a decision on
3 what we're going to do about the site.
4 So, your comments here tonight are
5 very important. And you will see answers to
6 your questions and comments reflected in the
7 document that we call a Responsiveness
8 Summary that we put out after we're all done
9 with this. After we get all of our written
10 comments in, EPA responds to the public.
11 So, what you say here tonight is important,
12 it goes on the record, it will be responded
13 to in person here, but it will also be part
14 of our Responsiveness Summary.
15 What I also want to talk about a
16 little bit is the public comment period for
17 written comments too. We're in the middle
18 of a public comment period now. It will end
19 on December 17th. So, if you don't get in
20 everything you want to say or ask about

21 tonight, you want to write it down, send a
22 question or comment on to Mark Granger, his
23 address is in the Proposed Plan that you
24 have, and just make sure that you get it to
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1 Mark by close of business December 17th, so
2 that those comments and questions are also
3 included in the public record for the
4 decision on this site.

5 I just want to remind you all to sign
6 in, if you haven't already, so that I can
7 put you on the mailing list, keep you there,
8 make sure I have the right address for you.

9 You all have a copy of the Proposed
10 Plan and you also have copies of the slides
11 that Mark will be showing tonight that you
12 can follow along with them. If you have any
13 questions or things that kind of come into
14 your head, you can jot it right down there,
15 so feel free to just follow along with that.

16 If you want to really look at the
17 documents involved with this site in depth,
18 over at the Cortland Free Library we have an
19 information respository that has all of the
20 documents pertaining to this site. So, if
21 you want to do any further exploration
22 before the end of the comment period for a

23 written comment, you want to go take a look,
24 everything is over at the Cortland Free
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1 Library.

2 I'm going ask you to please keep your
3 questions and comments until the end so that
4 our stenographer can get a clear record of
5 what happens here tonight. If you do have a
6 question or comment, please stand, give your
7 name, if you choose to, if you don't want
8 to, that's okay, and speak clearly so that
9 she can get the record down as accurately as
10 possible.

11 I think that's about it. I'm going
12 to turn it over to Joel, talk about the
13 Superfund process. Thank you.

14 MR. SINGERMAN: Can you all see
15 that? Can everyone see this or is it too
16 light?

17 Several well-publicized toxic waste
is disposal disasters in the late 1970's, among
19 them Love Canal, shocked the nation and
20 highlighted the fact that past waste
21 disposal practices were not effective. In
22 1980 Congress responded with the creation of
23 the Comprehensive Environmental Response,
24 Compensation & Liability Act, more commonly
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1 known as Superfund.

2 The Superfund law provided Federal
3 funds to be used for the cleanup of
4 uncontrolled and abandoned hazardous waste
5 sites and for responding to emergencies
6 involving hazardous wastes. In addition,
7 EPA was empowered to compel those
8 responsible for these sites to pay for or to
9 conduct the necessary response actions.

10 The work to remediate a site is very
11 complex and takes place in many stages.
12 Once a site is discovered, an inspection
13 further identifies the hazards and
14 contaminants. A determination is then made
is whether to include the site on the Superfund
16 National Priorities List, a list of the
17 nation's worst hazardous waste sites. Sites
18 are placed on the National Priorities List
19 primarily on the basis of their scores
20 obtained on the hazard ranking system, which
21 evaluates the risk posed by the site. Only
22 sites in the National Priorities List are
23 eligible for work by Superfund.

24 The selection of a remedy for a

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1 Superfund site is based upon two studies: A
2 Remedial Investigation and a Feasibility
3 Study. The purpose of the Remedial
4 Investigation is to determine the nature and
5 extent of the contamination at and emanating
6 from the site and the associated risk to
7 public health and the environment. The
8 purpose of the Feasibility Study is to
9 identify and evaluate remedial alternatives
10 to address that contamination.

11 Public participation is a key feature
12 in a Superfund process. The public is
13 invited to participate in all decisions that
14 will be made at the site. Through the
15 Community Relations Coordinator meetings
16 such as this one are held as necessary to
17 keep the public informed about what is
18 happening at the site and what is planned.
19 The public is also given the opportunity to
20 comment on the results of the investigation
21 and studies conducted at the site and the
22 proposed remedy.

23 After considering public comments and
24 the proposed remedy, a Record of Decision is
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1 signed. A Record of Decision documents why

2 a particular remedy was selected. The site
3 then enters the remedial design phrase,
4 where the plans and specifications
5 associated with the selected remedy are
6 developed. The remedial action, which
7 begins after design work is completed, is
8 the actual hands on-work associated with
9 cleaning up the site.

10 Following the completion of the
11 remedial action the site is monitored, if
12 necessary. Once the site no longer poses a
13 threat to public health or the environment
14 it can be deleted from the Superfund
15 National Priorities List.

16 MR. GRANGER: Hi. My name is Mark
17 Granger. I've been EPA's Remedial Project
18 Manager for the Rosen site for the past
19 seven years. Tonight I'll be discussing
20 site background, the Remedial Investigation,
21 Feasibility Study, the risk assessment and
22 presenting EPA's preferred alternative.

23 The Rosen site is located on
24 Pendleton Street here in the City of
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1 Cortland. From the 1890's through the early
2 '70s the Wickwire Facility operated on forty
3 acres between South Main Street and

4 Pendleton Street, smelting scrap metal and
5 using that smelted metal in the manufacture
6 of nails, wire, wire mesh, screening and
7 wire products. After the plant closed in
8 the early '70s, Philip Rosen was contracted
9 to demolish the western twenty acres and in
10 exchange was granted title to the eastern
11 twenty acres. Rosen operated on the site
12 from 1975 to 1985.

13 Ann, can we see figure 2?

14 MS. RYCHLENSKI: Sure.

15 MR. GRANGER: Here's South Main
16 Street, Pendleton Street to the right, you
17 can see the site outlined, and Philip Rosen
18 was contracted to demolish this twenty acres
19 and in exchange was granted the eastern
20 twenty acres of the site (indicating).

21 We go to the next slide. Rosen
22 activities at the site included scrap
23 processing and garbage hauling. The site
24 has been unoccupied since Rosen declared

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1 bankruptcy in 1985.

2 A New York State Department of
3 Environmental Conservation investigation of
4 the site in 1986 found significant levels of

5 contamination in groundwater and soil. As a
6 result of this investigation, the site was
7 added to Superfund's National Priority List
8 in March of 1989.

9 In January of 1990 a group of parties
10 potentially liable for cleanup agreed to
11 conduct the RI/FS for the site, and these
12 parties are known as potentially-responsible
13 parties or PRP's.

14 Next slide. EPA conducted a removal
15 action at the site from 1987 to 1989, where
16 drums of hazardous materials were removed,
17 along with severely-contaminated soils,
is transformers filled with PCBs. And, in
19 addition, the site was fenced.

20 The RI was performed from 1990 to
21 1995, with additional studies being
22 conducted from 1995 to 1997. I'll be
23 discussing the results of these studies in a
24 little while.

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1 The potentially-responsible parties
2 performed the investigation of the site with
3 EPA oversight, and studies included
4 groundwater sampling, soil sampling, both
5 subsurface and surface soil, sediment,
6 surface water and air sampling, along with
7 test hitting and pump testing of the

8 aquifer.

9 The results of the Remedial
10 Investigation: There are two groundwater
11 units beneath the site, an upper outwash
12 unit and a lower sand and gravel unit. The
13 groundwater flow direction is to the
14 northeast. The City of Cortland being
15 situated at the confluence of several
16 valleys has massive groundwater flow moving
17 beneath the site, far more that you would
18 find in most other areas of New York State,
19 and probably a lot of other places, as well.

20 The RI found that groundwater
21 contamination is confined to the upper
22 outwash unit.

23 The Cortland County -- I'm sorry.
24 The City of Cortland water supply is located
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1 far upgrading of the site. Most soil
2 samples were found to contain contaminants
3 above State guidance levels. And the RI
4 further found that surface water, sediment
5 and air have not been significantly impacted
6 by the site.

7 During the RI, groundwater and soils
8 were sampled for VOCs, SVOCs, PCBs and
9 metals. There were seven full rounds of

10 groundwater sampling. And based on the
11 groundwater and soil sampling efforts, it
12 was concluded that there was an intermittent
13 source of contamination in soils in the area
14 of well 6. I'll show you the figure in a
15 moment.

16 In addition, the RI concluded that
17 VOC levels in groundwater leaving the site
18 were relatively low and have undergone
19 significant decline over time.

20 Results of an investigation of the
21 cooling pond area, which I will show you in
22 a moment, concluded that the cooling pond
23 area of the site was not a significant
24 source of contamination to the aquifer.

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1 However, several areas of significant
2 PCB and TCA contamination were found, as
3 well as low to moderate levels of
4 contaminants elsewhere in soils on the site.

5 Results of a drum investigation
6 concluded that there were no buried drums
7 able to be located at the site.

8 Can we see figure 2?

9 MS. RYCHLENSKI: Figure 2, sure.

10 MR. GRANGER: Groundwater flow is to
11 the northeast. This being north, northeast,

12 groundwater moves this way, northeast and
13 out past Pendleton Street and then moves
14 into an easterly direction as it goes out
is into the aquifer at large (indicating).

16 And then figure 1, Ann.

17 MS. RYCHLENSKI: Mm-hm.

18 MR. GRANGER: There's valleys coming
19 in from the west and from the north. The
20 City of Cortland is situated at the
21 confluence of these valleys and groundwater
22 tends to move in the vicinity of the site to
23 the northeast, to a westerly direction and
24 then out down the Tioughnioga River Valley

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1 (indicating).

2 And the Cortland water supply, as you
3 can see, the groundwater flow moves in this
4 direction and down Cortland County
5 (indicating). The City of Cortland water
6 supply is in this vicinity, far upgrading of
7 groundwater associated with the Rosen site
8 (indicating).

9 Okay, Ann, figure 3.

10 MS. RYCHLENSKI: Mm-hm.

11 MR. GRANGER: The RI found a
12 significant area of contamination in the
13 well 6 area, as well in the T-02 areas

14 (indicating). Those are areas where there's
15 TCA-contaminated soils and PCB-contaminated
16 soils in the northeastern portion of the
17 site and in the Gantry Crane portion of the
18 site.

19 The cooling pond, located at the
20 southern portion of the site, comprises
21 about three acres, with the remaining area
22 of the site being about seventeen acres
23 (indicating).

24 Okay, next slide.

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1 MS. RYCHLENSKI: Mm-hm.

2 MR. GRANGER: Sampling results from
3 the I -- the RI were compiled and analyzed
4 in the risk assessment. The purpose of the
5 risk assessment is to determine whether the
6 sites poses a threat to the human health and
7 the environment should nothing be done.

8 EPA's acceptable risk range for
9 non-carcinogenic compounds is a hazard index
10 less than or equal to 1, and for
11 carcinogenic compounds a 10 to the minus 4,
12 to 10 to the minus 6 risk, which basically
13 translates to an increased cancer rate from
14 1 in 10,000 to 1 in 1,000,000.

15 Results for groundwater found that

16 risks fell outside EPA's acceptable risk
17 range, with non-carcinogenic risk coming in
18 at -- with a hazard index of 66 and
19 carcinogenic risks 1.5 times 10 to the minus
20 3.

21 Results for soil also fell outside
22 EPA's accepted risk range only for
23 non-carcinogenic risks, with a hazard index
24 64. All other risks were in or below EPA's
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1 acceptable risk range.

2 Next slide.

3 MS. RYCHLENSKI: Mm-hm.

4 MR. GRANGER: EPA's evaluated four
5 alternatives in the Proposed Plan to address
6 these risks.

7 Alternative 1: No action, is
8 required as a baseline in comparison and
9 assumes only monitoring over time, which is
10 the -- \$440,000 is the cost associated with
11 monitoring over a ten-year period.

12 Institutional controls alternative
13 assumes that the only action taken, aside
14 from monitoring, is administrative action in
15 the form of deed restrictions or
16 restrictions on groundwater extraction for
17 potable use, restrictions on excavating

18 soils, et cetera, things of that nature.
19 The cost was carried over, because the
20 administrative actions were assumed to be in
21 addition to monitoring over a ten-year
22 period.

23 Alternative 3 includes hot spot
24 excavation of the TCA and PCB areas, a cap

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1 over the cooling pond, with a cover over the
2 remaining portion of the site and natural
3 attenuation of residual groundwater. The
4 total cost over a ten-year period was
5 collated to be \$3.1 Million.

6 Can we go to figure 3, Ann?

7 MS. RYCHLENSKI: Mm-hm.

8 MR. GRANGER: Basically alternative
9 3 would provide for excavation of the two
10 TCA areas and two PCB areas, with a cap
11 placed over the cooling pond, which we call
12 a cooling pond. It was formerly a cooling
13 pond but was used as a landfill, we call it
14 the cooling pond area. It was a landfill
15 that accepted construction and demolition
16 debris. The most appropriate approach
17 toward final closure of that would be
18 placing a cap over the top of it and a
19 permeable cover placed across the remaining

20 portions of the site. And groundwater would
21 be naturally attenuated over time.

22 We'll go to --

23 MS. RYCHLENSKI: Want to go back to
24 the --

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1 MR. GRANGER: Yes.

2 Alternative 4 includes the same first
3 three components of alternative 3, which is
4 hot spot excavation, cooling pond cap, and a
5 cover over the remaining portion of the
6 site, and in addition provides for
7 groundwater extraction and treatment.

8 Can we go to the figure?

9 MS. RYCHLENSKI: Mm-hm.

10 MR. GRANGER: So, in addition to
11 excavation of the TCA and PCB areas with a
12 cap over the cooling pond portion of the
13 site and a permeable cover placed across the
14 remaining portions of the site, a series of
15 extraction wells would be placed across the
16 northern perimeter of the site that would
17 effectively create a hydraulic barrier or
18 wall, if you will, which would extract
19 groundwater and provide for a line to be
20 constructed out to the Tioughnioga River
21 where it would be discharged. And the total

22 cost for that -- can you go back to the
23 other slide?

24 MS. RYCHLENSKI: Sure.

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1 MR. GRANGER: -- which was
2 calculated over a five-year period was \$19.8
3 Million.

4 In evaluating the relative merits of
5 each of the alternatives, EPA weighs each of
6 them against nine evaluation criteria or
7 what we call insure EPA's nine criteria, the
8 threshold criteria being overall protection
9 of human health and the environment and
10 compliance with environmental regulations.
11 Those are the primary criteria we look at,
12 and then we move to the balance: Long-term
13 effectiveness and permanence, reduction of
14 toxicity, mobility or volume through
is treatment, short-term effectiveness,
16 implementability and cost-modifying
17 criteria, State and community acceptance,
is which Ann had mentioned earlier.

19 After careful consideration, EPA's
20 preferred alternative is alternative 3,
21 contaminated soil hot spots excavation and
22 disposal, installation of cap on former
23 cooling pond, site-wide surface cover and
24 natural attenuation of residual groundwater

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1 contamination.

2 EPA's rationale was this alternative
3 provides the best balance among the nine
4 criteria. It's protective of human health
5 and the environment, reduces toxicity,
6 mobility and volume through permanent
7 solution, it involves a simple
8 implementation with simple maintenance and
9 uses known effective technologies and is
10 cost effective.

11 Thank you for your time. I'll turn
12 the meeting back over to Ann.

13 MR. SINGERMAN: The preferred remedy
14 that was just described is just that, it's
15 EPA's preferred remedy, and EPA is not going
16 to make a final selection until we've
17 considered all public comments and after the
18 completion of the comment period.

19 MS. RYCHLENSKI: Okay, thank you,
20 Joel.

21 Okay. Mark is going to -- you've got
22 the lights. That's what we take EPA's
23 engineers with us for, these guys can do
24 lights.

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1 Okay. All right, we'll take
2 questions. As I asked before, just speak
3 clearly, stand and give your name if you
4 feel comfortable with that, so our
5 stenographer can get a good record.

6 Any questions or comments?

7 (Whereupon there was no verbal
8 response)

9 MS. RYCHLENSKI: No questions or
10 comments?

11 MS. KATHLEEN HENNESSY: I have a
12 question.

13 MS. RYCHLENSKI: Okay.

14 MS. KATHLEEN HENNESSY: My name is
15 Kathleen Hennessy. And I'm just wondering
16 about the groundwater, because even though
17 it doesn't go into the City's water supply,
18 what effect does it have on people with
19 wells who-are within the path of the
20 groundwater? I mean, I know you said it
21 goes into the Tioghnioaga River, but --

22 MR. GRANGER: Right. We've done
23 some investigations in terms of when there
24 is any wells and we're unable to find anyone

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1 with a well. Basically the plume is
2 confined within the City of Cortland, and
3 it's my understanding that everyone within
4 the confines of the City limits is on City
5 water.

6 MS. KATHLEEN HENNESSY: Until it
7 goes into the river.

8 MR. GRANGER: Well, by the time it
9 gets to the river, to tell you the truth,
10 basically it's petered out.

11 MS. KATHLEEN HENNESSY: And it
12 doesn't -- but doesn't it leave toxic
13 elements behind on the path?

14 MR. GRANGER: Contaminants can be
15 absorbed to soil, but in general the type of
16 contamination that's leaving the site is
17 basically swept along and disbursed over
18 distance and over time, which is -- that's
19 not something that's exclusive to this site,
20 that's something that basically occurs at
21 all sites. And if you're removing sources,
22 as we are here, you would expect that
23 petering out period to be shorter and
24 shorter.

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1 MS. RYCHLENSKI: Yes, sir?

2 MR. LARRY ASHLEY: My name is Larry
3 Ashley. I wanted to start with a comment.
4 We've handed to Mark a number of questions
5 that have arisen from a Curb meeting which
6 considered the Proposed Plan as you gave it
7 to us, and we sort of like to present those
8 publicly, sort of get some reaction now and
9 get them on the record.

10 The first thing that I would like to
11 say is that in terms of Ann's statement that
12 community acceptance of the plan is part of
13 what you aim at, Curb at least finds it
14 difficult to simply accept the plan since
15 some crucial elements of the plan are
16 postponed to the design phase, in particular
17 the nature of the cap that's going to be on
18 the site and details about the groundwater
19 monitoring, both of which-are elements for
20 the nine years of the development of this
21 that Curb has been fairly involved in and
22 considers to be fairly crucial from the
23 point of view of the welfare of the
24 community.

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1 So, we just wanted to report to you
2 that we were finding it hard to just sort of
3 selectively say yes, this looks like a good

4 thing for the community and/or no, this
5 looks like something that we would not like
6 in the longrun, because -- because of the
7 absence of specificity for a few details, in
8 particular the cap and the details about
9 groundwater monitoring, both of which are
10 postponed until the design phase is
11 completed.

12 Is that clear?

13 MR. GRANGER: Yes, that's perfectly
14 clear.

15 And let me say that I think that one
16 of the strong points of this Proposed Plan
17 is that it does not specify the cap
18 configuration nor the specifics of the
19 groundwater monitoring plan. EPA is
20 definitely looking for a protective cap and
21 it's definitely looking for a comprehensive
22 monitoring program. If you specify both of
23 those -- but let me just start with the cap.
24 If you specify what the cap is, you're
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1 basically closing off the possibilities for
2 what you may want to do with the cap in the
3 future.

4 So, what our cap -- ultimately what
5 our cap components are going to be could be
6 a number of things, all of which would have

7 an equivalent protection, such as you could
8 have an impermeable, geotextile layer with a
9 foot of soil with grass on top. If we
10 specified that, then it could be difficult
11 to say okay, now we're going to build a road
12 across the cap, which that would be a part
13 of the cap too, but that would be asphalt
14 with gravel. Or if you wanted to put gravel
15 and put something else across the top, or if
16 you wanted to build a building, there's a
17 lot of ways -- there's a lot of directions
18 that this site could go in terms of the
19 future.

20 At a site where the site was not
21 going to do anything, nothing was going to
22 happen with the site, you could specify, you
23 could say, all right, we're going to put,
24 you know, we're going to asphalt the entire
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1 site and that's going to be the end of that.

2 I think that we're trying to allow
3 the maximum flexibility in terms -- and
4 provide that benefit to the community.

5 Similarly, with the monitoring
6 program, we could specify now what that
7 monitoring program is, but then you lock it
8 in, and it is possible that EPA would want

9 to require additional monitoring points,
10 would want to go out further into the
11 aquifer or require the installation of
12 monitoring wells, and if we went down on
13 record as saying that this is going to be
14 the monitoring program when we forge a legal
15 agreement with whoever's going to implement
16 the remedy, that's locked in in the Record
17 of Decision, so -- okay, did I answer your
18 question?

19 MR. LARRY ASHLEY: You did, although
20 it postpones rather than answers some of our
21 difficulties. Because amongst those
22 proposed remedies, they may all be equally
23 protective, but they're not equally
24 desirable from the point of view, in our
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1 judgment, of the community and what the
2 community will live with for the term after
3 that. So, that's a crucial item which
4 remains for us crucial, and which we're
5 going to, I guess, continue to be asking or
6 trying to make sure that what eventually is
7 decided is not anything that the community
8 is going to find hard to live with in the
9 longrun. Such, in my judgment, would be an
10 asphalt cover.

11 Putting an asphalt barrier, right
12 there limiting, I think, a lot of the
13 possibilities for -- for the community in
14 the future. This is a crucial issue for us.
15 That's all I'm saying.

16 MR. GRANGER: Are you worried about
17 an asphalt cover?

18 MR. LARRY ASHLEY: Am I worried
19 about it?

20 MR. GRANGER: Are you worried that's
21 going to be what's going to happen?

22 MR. LARRY ASHLEY: That's one
23 possibility, yes.

24 MR. GRANGER: Well, without going

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1 down completely, you know, staking my
2 reputation on it, we're not really looking
3 to place an asphalt cover over the site. I
4 know that's not necessarily reassurance for
5 you.

6 MR. LARRY ASHLEY: That's a relief,
7 because in the document that you sent to us,
8 in parentheses there was always the soil,
9 gravel, asphalt trilogy, and one of those --
10 one item in that trilogy is importantly, I
11 think, undesirable for the community, so --

12 MR. GRANGER: Right.

13 MR. LARRY ASHLEY: -- if EPA was,
14 you know, still envisioning doing that, then
15 that would be crucial for us.

16 MR. GRANGER: I think the only
17 asphalt that we would envision on the Rosen
18 site would be a road, in terms of like
19 developing the property for-some other
20 purpose.

21 MR. LARRY ASHLEY: Well, we look
22 forward to that.

23 MR. SINGERMAN: How about the other
24 items within parentheses, do you object to
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1 any of the other ones or just the asphalt?

2 MR. LARRY ASHLEY: The crushed --
3 what was it -- crushed gravel or crushed
4 stone or whatever it was, I don't quite know
5 what that amounts to, and I guess I don't
6 remember that that ever arose in your
7 discussion with us as the basic cover, but
8 that covered by soil seems plausible, but
9 crushed stone by itself, I mean, I would
10 want to know what the ramifications are for
11 that remedy too.

12 MR. GRANGER: Okay.

13 MS. RYCHLENSKI: I think too -- I
14 just want to interject for a moment: that

15 as we go into remedial design, we'll
16 continue to work with Curb and with the rest
17 of the community on that design. We don't
18 just come out and spring a remedial design
19 on people and say, hey, here, this is what
20 it is. We come out, we'll talk about it,
21 we'll have a meeting similar to thie one,
22 maybe a meeting before that, maybe one after
23 that, depending on what the community's
24 requirements are and the community's

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1 concerns are. But here it is written in
2 stone and we're never going to talk to you
3 again, we'll never do that. We've been in
4 touch and we'll stay in touch. You guys
5 have been very important in this process.

6 MR. SINGERMAN: Plus if you have any
7 ideas now or any recommendations in writing,
8 we consider that --

9 MS. RYCHLENSKI: Absolutely.

10 MR. SINGERMAN: -- for the future.

11 MS. RYCHLENSKI: Absolutely.

12 Yes, sir?

13 MR. SAM FARRELL: I'm Sam Farrell.

14 You mentioned the groundwater extraction and
15 treatment. Could you go into more detail on
16 that? If that happened, would that
17 eliminate a cap if that was done in this

18 particular area?
19 MR. GRANGER: No, it would not.
20 MR. SAM FARRELL: It would not.
21 MR. GRANGER: The purpose of the cap
22 is to eliminate exposure to surface soils.
23 Are you talking about the cap over the
24 cooling pond or the surface cover?

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1 MR. SAM FARRELL: Yes, well --
2 MR. GRANGER: Or both?
3 MR. SAM FARRELL: About the
4 groundwater extraction, would that also --
5 MR. GRANGER: Right.
6 MR. SAM FARRELL: -- would you be on
7 the Rosen site? of course would that.
8 MR. GRANGER: Okay.
9 MR. SAM FARRELL: Would you also be
10 drying out the pond?
11 MR. GRANGER: Okay. The pond is not
12 necessarily -- the pond is not any different
13 from the remainder of the site in terms of
14 the aquifer. It's not a pond. It's
15 basically a landfill. It's been covered and
16 it's flat on -- it's at ground level on one
17 end and it's mounded up fifteen feet high on
18 the other end, so there's no pond, per se.
19 Basically when we say pond, we mean

20 landfill. And there's construction debris,
21 actually most of the Wickwire buildings were
22 dumped into the cooling pond.

23 So, as we were digging down doing our
24 investigation, what you tended to see was
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1 twenty feet deep of bricks mixed in with
2 timbers and metal rods and things of that
3 nature. So, the groundwater extraction and
4 treatment actually -- just backing up -- and
5 one of the things I had mentioned in my talk
6 was that there's a massive groundwater flow
7 that's moving beneath the Rosen site and
8 beneath the Cortland area in general.

9 As you extract groundwater, you
10 wouldn't tend to dry out anything. You'd
11 tend to extract the groundwater, you'd
12 extract a lot, probably a million to a
13 million and a half gallons a day, but you
14 wouldn't be drying anything out. So, that
15 would not influence the cap at all. The
16 purpose of the cap doesn't have anything to
17 do with the groundwater, per se.

18 Is that clear?

19 MR. SAM FARRELL: Yes.

20 MR. GRANGER: Did I address your
21 question?

22 MR. SAM FARRELL: (Nods head)

23 MR. GRANGER: Okay.

24 MS. RYCHLENSKI: Yes?

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1 MS. JAMIE DAGLER: Jamie Dagler
2 (phonetic) from Curb. Our second question,
3 Mark, is kind of related to the first
4 question that Larry asked. We're just
5 pressing you a little bit more on this. In
6 general we just want to know why more
7 options weren't costed out in the Proposed
8 Plan?

9 For example, you know, the fact that
10 the Proposed Plan, there are four
11 alternatives; however, alternative 1 and
12 alternative 2 are out of the question, I
13 think, right?

14 MS. RYCHLENSKI: Well, I think
15 alternative 2 is a viable alternative, but
16 that's a subjective statement.

17 MS. JAMIE DAGLER: Okay. I think I
18 can, at least speaking for Curb, it would
19 certainly not be acceptable to Curb, but --
20 so, alternatives 3 and 4 are what we agreed
21 is really the only real alternatives for any
22 kind of significant cleanup of the site, and
23 alternative 4, certainly based on the
24 informal discussions that we've had with you

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1 all along, appears to be a bit unreasonable
2 perhaps, given the cost in relation to the
3 likely benefit of groundwater treatment,
4 which leaves us then with only one
5 alternative.

6 Our question or our comment is this:
7 Now, again, I am kind of echoing what Larry
8 already said, given the lack of detail about
9 groundwater monitoring, about the surface
10 cover and alternative 3 as it has been
11 presented in the plan, we're wondering if --
12 if what the Proposed Plan actually
13 incorporates is an alternative which
14 actually encompasses many possible
15 alternatives?

16 In other words, why, perhaps,
17 wouldn't you have costed out the difference
18 between an asphalt cover as opposed to a
19 one-foot soil cover with a geothermal --
20 what's it called -- a geotextile cover as
21 opposed to a two-foot soil cover, et cetera?

22 In other words, are there significant
23 differences in cost to doing these kinds of
24 options or doing some combination of those

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1 things?

2 And, you know, as you know, we
3 certainly raised the issue of a soil
4 scrapedown with you informally earlier in
5 the process, and I guess we want to, for the
6 record, ask that again. Wouldn't it have
7 been useful to cost out, as another
8 alternative, a soil scrapedown?

9 For example, it seems to us as a soil
10 scrapedown would have been a more permanent
11 remedy. And if that's the case, would it
12 have been cost effective in terms of
13 reducing long-term maintenance costs? For
14 example, as opposed to blacktop, asphalt or
15 other alternatives?

16 So, again, we're a little bit
17 perplexed about what we see as a narrow --
18 really literally just one realistic option
19 which seems to have within it the
20 possibility of a number of options which are
21 not costed out as separate options.

22 Does that make sense to you?

23 MR. GRANGER: Yes. As I had
24 mentioned as we were talking to Larry, I
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1 can't emphasize enough that the flexibility
2 that's built into the site-wide cover system
3 is a strong point in the Proposed Plan, not
4 a weakness.

5 In fact, most likely the cost
6 difference between an asphalt cap, a gravel
7 cap, a dirt cap is probably not all that
8 much. What we were looking to get was the
9 reduction of risk by ensuring that the site
10 was covered from one end to the other. The
11 flexibility comes in whereby if I specify --
12 or I shouldn't say I -- but if EPA specifies
13 in a Record of Decision some cap
14 configuration and then locks it in, it
15 eliminates the possibility of anything else
16 being done on those portions of the site,
17 which is significant. That's seventeen
18 acres of property, seventeen acres of
19 undeveloped property in the City of
20 Cortland.

21 Again, for example, if I specify --
22 if EPA specifies a grass -- a dirt cover
23 covered with soil and grass from one end to
24 the other, it doesn't allow the possibility
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1 for then going in and putting a road and
2 developing some sort of -- performing some
3 kind of development on the property in the
4 future. Is that clear?

5 MS. JAMIE DAGLER: Yeah, although I
6 guess I'm kind of confused, maybe, about the
7 process and the significance of the ROD.
8 For example, I guess I just envision this as
9 proceeding such that at some point there is
10 a definite decision made about all aspects
11 of the cleanup, because, I mean, we've been
12 under the impression that eventually EPA
13 turns the site over to the DEC, for example,
14 and at that point obviously you're no longer
15 involved.

16 So, I'm not clear on -- I understand
17 your point about flexibility, and certainly
18 makes perfect sense, but at what point does
19 the final configuration of what's going to
20 be done there become decided?

21 And certainly Curb has been
22 interested in making sure that public
23 comment -- official public comment
24 certainly, as well as the kind of informal

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1 interchange will continue to be allowed
2 through all of those. Maybe we're just not
3 clear about how the process will actually
4 unfold after the ROD.

5 MR. GRANGER: Well, we'll be looking
6 for a design document, whether we're
7 performing it or whether the PRPs are
8 performing it, within -- let me see --

9 probably 1999, and at that point you'll be
10 finalizing all your cover configurations and
11 your monitoring programs and your cap
12 configuration.

13 MS. JAMIE DAGLER: So, the
14 flexibility you're talking about, you're
15 conceiving about the desirability of that
16 flexibility for that now two- or three-year
17 period?

18 MR. GRANGER: That's the way I
19 envision it at present, yes, although
20 depending on what the City of Cortland
21 you know, as you know, EPA's not in the land
22 development, we're just allowing for it.
23 Depending on how creative the City of
24 Cortland is or Cortland County or whoever's

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1 approaching the City in the meantime would
2 dictate somewhat how that flexibility is
3 going to fall out.

4 I don't think I was done with the
5 second part of Jamie's question. Before we
6 move on

7 MS. RYCHLENSKI: I think Larry had
8 another question.

9 MR. LARRY ASHLEY: No, it was really
10 a follow to Jamie's.

11 MR. GRANGER: Okay, jump in.

12 MR. LARRY ASHLEY: The flexibility

13 might seem important if you were going to
14 gather some new information meanwhile, that
15 is if we're keeping flexible for a couple of
16 years, and that's an advantage. Presumably
17 you're going to get some information that
18 will come down solidly on the side of one
19 form of capping rather than another or one
20 display of monitoring rather than another.
21 Are we planning to gather information during
22 the intervening couple of years so that we
23 gather information we don't presently have
24 in making that decision?

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1 MR. GRANGER: Absolutely.
2 MR. LARRY ASHLEY: Absolutely, okay.
3 MR. GRANGER: The information is
4 going to be is anyone interested in putting
5 some kind of enterprise on the site?
6 MR. LARRY ASHLEY: That's the
7 information that we're --
8 MR. GRANGER: Yes.
9 MR. LARRY ASHLEY: Not testing or
10 anything like that?
11 MR. GRANGER: No, absolutely.
12 MR. LARRY ASHLEY: Okay.
13 MR. GRANGER: No, there's no testing
14 necessary for implementation of a cover on
15 the site.
16 And getting to a second part of

17 Jamie's -- is that clear, Larry?

18 MR. LARRY ASHLEY: Yeah.

19 MR. GRANGER: Getting to the second
20 part, Jamie, we have four options in the
21 Proposed Plan. There were several other
22 options that were evaluated in the
23 Feasibility Study. Obviously we can't put
24 all of the information that's included in

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1 the Feasibility Study into the Proposed
2 Plan.

3 One of the sections of the
4 Feasibility Study screens out alternatives
5 that don't really appear to be realistic
6 from a number of standpoints. And one of
7 those addressed excavation of the entire
8 contaminated soils from one end of the site
9 to the other, which basically entails a
10 massive undertaking of digging down six feet
11 across the entire site, which is what we
12 found after going through several test pits,
13 that the soils look like they've been
14 impacted in some way down to six feet, and
15 without, like, testing, which is another
16 probably tens of thousands of dollars more,
17 that we would -- that that was not really a
18 realistic approach.

19 And that covering the site meets the

20 goal of reducing the risk, which is
21 basically the entire thrust of the program
22 is to -- in balancing the nine criteria
23 coming up with approaches that address site
24 risks, not necessarily ease of maintenance

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1 over the long term, which is a
2 consideration, but granted, doing that
3 massive undertaking would make things very
4 simple, because you're just removing
5 everything, you don't have anything else to
6 worry about. But when you start putting
7 that into -- weighing that against what your
8 other options are, it doesn't appear to be
9 realistic.

10 MS. RYCHLENSKI: This gentleman here
11 has been waiting (indicating).

12 MR. ERIC DUMOND: Yeah, my name is
13 Eric DuMond from Curb. And this right now
14 we're in the middle of the public comment
15 period. What happens if, say, a
16 year-and-a-half from now after the Record of
17 Decision is made you're talking about maybe
18 new technologies possibly arising to -- that
19 may alter, you know, the cap, will there be
20 any future public comment period before the
21 Record of Decision is implemented, before
22 action is taken?

23 MR. GRANGER: The Record of Decision
24 being implemented as is, there would not be

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1 any further comment period unless there's a
2 comment period associated with closeout.

3 MR. SINGERMAN: Well, there are
4 mechanisms in the law that allow for changes
5 to remedies. There's ROD amendments,
6 there's an explanation of significant
7 differences, and really it's a function of
8 what type of changes are necessary.

9 Quite frequently during design we may
10 find something in the site that changes our
11 opinion about the remedy, a new technology
12 may come about, so we have the ability and
13 flexibility to change remedies.

14 So, depending upon which mechanism we
15 would use to change a remedy, we would seek
16 public comment to make sure that -- that
17 whatever we changed would be, you know,
18 acceptable to the public, and in the same
19 way we're requesting public comment now.

20 MR. ERIC DUMOND: But the only
21 the problem that I see is that, you know,
22 we're in the Record of Decision, you know,
23 public comment comes before the Record of
24 Decision. We don't have any definite

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1 really any definite answer as -- as far as
2 specifics on the site. How can we, as a
3 community, or as an individual really,
4 decide whether this proposal is acceptable
5 to us?

6 That's, you know, we had a meeting
7 the other night -- last night, and I was --
8 I'm quite -- I'm very adamant about
9 imposing, you know, the proposal number 3.
10 because without any specifics, how can this
11 community accept this proposal as is?

12 And if after the record of, you know,
13 or after this time period is over we're not
14 allowed -- our comments aren't going to
15 influence the EPA's decision on this until
16 extremely late in the process, I don't think
17 that's doing this community any justice.

18 MR. SINGERMAN: The Record of
19 Decision comment period is just a comment on
20 the remedy. EPA will accept comments all
21 throughout the process, through the
22 deletions of the site from the National
23 Priorities List, at any time. We're always
24 willing to hear what people have to say

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1 about what we're doing.

2 We have meetings all the time, you
3 know. We can have -- like say, for example,
4 in various, you know, through the design, I
5 mean, really what we feel is necessary, what
6 the public feels is necessary as far as
7 keeping them informed and trying to make
8 sure the public's happy with what's going on
9 with the site.

10 We're not trying to ram this down
11 anyone's throat. Basically we're here,
12 there's some basic principles of the remedy
13 that are being identified and we're
14 excavating four known hot spot areas that we
15 believe are the significant sources of
16 contamination. We're covering over the
17 former cooling pond. And I mean, we
18 specifically identified, you know, those, I
19 mean, those are the major part of the
20 remedy.

21 And the other part covering over
22 is we're not exactly sure what we'll be
23 covering with, but, I mean, whatever we do,
24 we'll be protective of public health and the

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1 environment.

2 MR. ERIC DUMOND: So, basically in
3 all actually the official public comment
4 period doesn't end the 17th, in other words,
5 is what you're saying?

6 MR. SINGERMAN: The comment on the
7 actual remedy, once we consider public
8 comment, then we'll make a decision on the
9 remedy, but we're always open to concerns or
10 comments from the public.

11 I mean, we -- just as we presume
12 comments were provided, you know, from the
13 beginning, you know, when the site was
14 listed up until now we have -- people have
15 commented on various things and Curb has
16 presented concerns to our agency and, you
17 know, Mark has met with the group and, you
18 know, various other parties, I mean, you
19 know, have expressed concern, so EPA has
20 considered those.

21 So, throughout the whole process from
22 listing the site on the National Priorities
23 List to deletion, EPA will always consider
24 anybody's concerns, whether it be the

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1 public's, potentially-responsible parties,
2 you know, local officials, elected
3 officials, whatever.

4 MS. RYCHLENSKI: And just to add to
5 what Joel has said, I've been doing
6 community relations for the agency for a
7 very long time. And this is --

8 A VOICE: You need to speak up.

9 MS. RYCHLENSKI: I'm sorry, I've

10 been doing community relations for the
11 agency for a very long time and I have seen
12 RODs reopened and changed, and what we call
13 an Explanation of Significant Differences
14 done, because communities are vocal and
15 because they are concerned.

16 So, this is an official public
17 comment period, as Joel mentioned, to this
18 proposed remedy, but the public activity and
19 especially, a group like yours in a
20 community like this, does not end until the
21 site is deleted. It continues.

22 We have some sites that are extremely
23 active. This is one where the community's
24 very active. We have some where the

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1 communities don't become active at all, but
2 especially on sites like this it's a
3 continuing process. Especially you have a
4 TAG, it's a continuing process.

5 Yeah, Larry?

6 MR. LARRY ASHLEY: I think I can cut
7 through this pit. Is it possible within
8 Mark's guidelines or EPA's guidelines that
9 you return to this community before the
10 decision is already made?

11 Because I'm a person who does not
12 believe that once a decision has been made
13 you're in the same position as just before

14 it is made. I think what would be best from
15 the point of view of -- of bringing this
16 community into the decision, would be if
17 just prior or just at that moment when
18 you're trying to decide what the nature of
19 that cap is, you would return to this
20 community and say here are the realistic
21 alternatives as we're now looking at them,
22 we're about to decide, give us some input,
23 because we know you're going to live with
24 what we decide.

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1 If it's decided independently of us,
2 I think it will leave residually. There
3 will always be people who think they have
4 been kept out of the process and would --
5 may move to opposition just on that. I
6 think in the point of community relations
7 and procedure I think it would be -- not
8 give a -- a fet a compli (phonetic), but a
9 genuine chance of contribution from -- not
10 that you have to follow what we do, but we'd
11 like the language of being part of the
12 process to have some real meaning, and
13 something like that would do it.

14 Now, that may not be standard, but I
15 guess I would like to request it, if it's
16 possible within the framework of what you
17 do.

18 MS. RYCHLENSKI: It's not unusual.
19 We can do it.
20 MR. GRANGER: I just want to make
21 sure exactly what you're talking about.
22 You're saying before the decision's final.
23 We're anticipating finalizing our decision
24 within the next month or so.

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1 Now, but what you're talking about
2 especially is a final decision as to what
3 the final cap configuration's going to be,
4 which is presumably at the stage of
5 completion of the remedial design, is that
6 correct?
7 MR. LARRY ASHLEY: What you're
8 talking about for desirable purposes from
9 your point of view leaving open and flexible
10 for up to two years.
11 MR. GRANGER: It's not from my point
12 of view. It's from EPA's point of view and
13 from the community point of view.
14 MR. LARRY ASHLEY: Okay, stand
15 corrected. But in any case, if that's still
16 going to remain open, we'll still be here
17 and we will be interested in knowing what
18 you are considering doing to that twenty
19 acres, which is our twenty acres, you know.
20 We don't want to see it -- we don't
21 want to see it become either an eyesore or

22 unuseable. Or actually I would say I trust
23 that whatever cover you put on will be
24 health protective. I mean, I just -- I have

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1 to believe that you're going to do a good
2 job of insulating whatever residual health
3 dangers remain on the site from the
4 community, but there's much more that
5 remains at stake, because I think I could do
6 that along the whole spectrum of things,
7 some of which could be a disaster from our
8 community.

9 And economics aside, if you won't
10 tell us what the costs of these various
11 things are, we would certainly like to tell
12 you which various alternatives we would
13 prefer as a community to end up with for
14 that site, and I think that's really where
15 Eric was going with his question.

16 MR. GRANGER: Let me just state for
17 the record and make sure that I paraphrase
18 for the record, you're not worried about
19 acceptable cap configurations. What you're
20 worried about, is it an unacceptable cap
21 configuration from the community standpoint?
22 For example, one example of which would be a
23 complete asphalt paving of the property.

24 MR. LARRY ASHLEY: Exactly.

1 MR. GRANGER: And you would like to
2 be kept informed and the opportunity to have
3 input at the point where those decisions are
4 being made?

5 MR. LARRY ASHLEY: Yes.

6 MR. GRANGER: Okay. That's my
7 paraphrase and I'll defer to my supervisor.

8 MR. SINGERMAN: But also is there
9 anything else in the list of your, you know,
10 dislikes, as far as, I mean, we'd be more
11 than happy to consider if you want to just
12 identify other, you know, other caps that
13 you don't think are appropriate, asphalt and
14 anything else?

15 One of the reasons we're here is to
16 hear your concerns. I mean, you don't have
17 to identify them right now. It's an ongoing
18 process. One of the reasons we have TAG is
19 that your advisor, you know, we can interact
20 with the advisor and the group to make sure
21 that the group is and the community at large
22 in happy with what were selecting, what
23 we're ultimately selecting for the site.

24 So, if you can identify now or at

1 some time in the future, we'd be more than
2 happy to take that request.

3 MR. LARRY ASHLEY: Yes. Would just
4 like to say, although I don't know if you
5 would like to be pressed on this too hard,
6 that we were sort of surprised when the
7 possibility was mooted of one-foot cover,
8 because we had thought that two feet, in
9 fact someone asserted three feet, but it's
10 controversial for us what the depth of that
11 cover is expected to be, so we'd like to
12 think that through, and if a soil cover for
13 the site is the selected capping surface,
14 capping method.

15 MR. GRANGER: So, I mean, I
16 anticipate an ongoing relationship with Curb
17 and individual members of Curb, although
18 there's always the hit by a bus syndrome
19 whereby, you know --

20 MR. LARRY ASHLEY: Right, something
21 doesn't --

22 A VOICE: You or us?

23 MR. GRANGER: Yeah, could be either
24 way. So --

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1 MR. LARRY ASHLEY: We've dodged a
2 few buses.

3 MR. GRANGER: So, let's put down for
4 the record that we need to address the
5 possibility of formalizing an agreement to
6 maintain communication with the community

7 regarding the cap configuration.

8 MR. LARRY ASHLEY: Thank you.

9 MR. SINGERMAN: Because also we
10 don't want to preclude the appropriate
11 development of the property, so we don't
12 want to put something down there, therefore
13 it can't be developed, so, I mean,
14 ultimately we see it as being -- developing
15 the piece of property.

16 MS. RYCHLENSKI: Jamie?

17 MS. JAMIE DAGLER: Yeah. Could I
18 also just kind of state for the record that
19 I think one reason why we're concerned
20 about -- this is not the main reason, I
21 think Larry's discussed the main reason --
22 in that, you know, I guess we would like to
23 see, you know, that kind of more official
24 commitment that there will be a public

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1 comment at this stage, et cetera. Because
2 we have had a really good relationship as a
3 result of the TAG process, et cetera. It's
4 not clear that we will have that TAG for
5 very much longer.

6 I mean, Mark, you know our situation,
7 we're basically out of money. We need to
8 decide whether we want to reapply for an
9 additional TAG. And the fact of the matter
10 is administering this TAG has been a

11 nightmare for us and I'm not really sure
12 that we can do it. And so if that happens,
13 Curb is not going to dissolve. I can say
14 that we are in it for the longrun, but the
15 nature of our relationship with you may
16 change, you know, if we don't have the
17 technical advisor.

18 And we want to make sure that, you
19 know, if that happens, you know, if Curb
20 kind of officially dissolves as a TAG group,
21 that there are mechanisms in place to allow
22 for us as individuals, or collectively
23 without TAG and the technical advisor --

24 MR. GRANGER: Well, the technical

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1 advisor works for you. Any relationship
2 that you have established with EPA through
3 my position or any other relationships that
4 you might have is very straightforward.

5 MS. JAMIE DAGLER: Yeah.

6 MR. GRANGER: The TAG is ancillary
7 to any relationship that's been established.

8 MS. JAMIE DAGLER: Well, Mark,
9 again, I firmly believe that that is what
10 will happen if you remain Project Manager,
11 but if you don't -- and you really stuck
12 with us over the long -- we went through two
13 Project Managers in a short period of time
14 and you've been with us for a long time and

15 we really appreciate that. But again, we're
16 talking about years really into the future,
17 and so we're a little bit nervous about our
18 ability to sustain that relationship with
19 EPA, because we may not have a TAG.

20 And also if you end up not being in
21 this position we'd be having to forge around
22 with a new Project Manager without a TAG,
23 which I assume would be a bit more difficult
24 to do, maybe depending on that individual

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1 and his or her experience with community
2 groups. That's kind of where we're at.

3 MR. GRANGER: Okay.

4 MR. SINGERMAN: Mark will look both
5 ways twice before crossing now.

6 MS. RYCHLENSKI: So, basically what
7 we're doing is we're chaining Mark to the
8 Rosen site for the rest of his professional
9 life.

10 I saw a hand go up here (indicating).

11 MR. TODD MILLER: Todd Miller. I've
12 got my public hat on tonight. My question's
13 two parts, hypothetical. Maybe one, Mark,
14 you can answer and maybe the second part
15 Dave here.

16 One: Option 3 will allow a plume to
17 go beyond the extent of the site underneath
18 the residences. Is there a plan for

19 surveys, such that in the future someone
20 doesn't come in the neighborhood and drill a
21 well?

22 And two: If someone wanted to drill
23 a well anyway over the plume, what are their
24 water rights situation? Can they go ahead,

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1 drill it and say, yeah, my water's
2 contaminated, I'm going to sue or something
3 like that?

4 MR. GRANGER: My understanding is
5 that there are restrictions on installing
6 potable drinking water wells within the City
7 of Cortland, or at a minimum you need to
8 obtain a permit first. I would say that as
9 part -- typically as part of EPA's remedy
10 and as part of the consent decree that would
11 be entered into with the
12 potentially-responsible parties, or as part
13 of EPA's implementation of the remedies
14 should the potentially-responsible parties
15 not desire to proceed with implementation of
16 the remedy, a part of whatever remedy that
17 gets selected is the formalization of
18 institutional controls, such as deed
19 restrictions and restrictions on
20 installation of wells for potable purposes,
21 sometimes even for nonpotable purposes.

22 I don't see, personally at this
23 point, just speaking from my own opinion, I
24 don't see the need to restrict groundwater

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1 withdrawals for industrial purposes at this
2 point in time, but I do see the wisdom of
3 restricting potable withdrawal of water
4 downgrading of the Rosen site, and that
5 would be formalized in the future.

6 MR. TODD MILLER: I guess it comes
7 down to a question of water rights of the
8 property owner. Can you prevent a property
9 owner from using their water underneath
10 their property?

11 MR. GRANGER: That's a good
12 question. I don't know if that would be
13 enforceable, but it certainly would be --
14 I'm going to have to look into that one,
15 Todd.

16 MR. SINGERMAN: Well, if
17 institutional controls is part of the
18 remedy, then EPA could effectively prohibit
19 people from using the water underneath the
20 property. I mean, if we select, you know,
21 part of the remedy that we're proposing
22 includes institutional controls, such as
23 dead restrictions or other mechanisms to
24 prevent any installation of potable water

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1 wells within the extent of the plume, so
2 basically that's, you know, that would be
3 part of the remedy.

4 So, it would be up to some local
5 authority to implement that aspect of it.
6 Like, for example, whoever controls the
7 issuance of permits for installation of
8 wells would know that they cannot issue
9 permits for X number of years until EPA says
10 that, you know, the water is now safe. So,
11 therefore, you cannot install a well, so
12 that would be controlled as part of the
13 remedy.

14 But EPA itself cannot -- you can't go
15 out and say -- we're not the authority that
16 issues the permits, so we're not the one
17 that can say you can't issue a permit. We
18 would just tell the party, whether it's the
19 County or City. I guess it's the City.

20 MR. TODD MILLER: Does the County
21 have a right to refuse a permit on the basis
22 that water is contaminated beneath them?
23 That's my question.

24 MR. SINGERMAN: Yes, because one of

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1 the purposes of issuing a permit is that you
2 don't want to install a well that's not a
3 potable supply, so they're not going to

4 approve a permit if it's not going to have
5 usable water, and if it's contaminated it's
6 not usable unless you treat it, so there's
7 also some interrelationship between the fact
8 that there's already public water supply.

9 So, sometimes there's -- there are
10 local ordinances that preclude installation
11 of private wells in the area that's
12 controlled by a public water supply, so I
13 don't know the specific -- specifically what
14 the law is here, but that, I mean, it's
15 likely to be the case.

16 MR. TODD MILLER: Actually that
17 would work in Cortland, because actually
18 Cortland is only one of the few places that
19 has a permitting system. Most counties
20 don't in New York, but fortunately Cortland
21 does.

22 MS. RYCHLENSKI: Okay. This lady
23 here (indicating).

24 MS. AUDREY LEWIS: My name is Audrey

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1 Lewis. I am from the Health Department, the
2 agency that would be issuing permits, and I
3 think that the issue may soon be a moot
4 point, because for other reasons they're
5 looking into restricting any wells drilled
6 within the City public water supply, water

7 district to cross-contamination,
8 cross-connection problems. So, it may not
9 be allowed anywhere within the water
10 district to drill potable waters. As well
11 as the plume doesn't go outside City limits
12 and once it reaches Cortlandville that's no
13 longer in that.

14 MR. GRANGER: Do you have a time
15 frame for that, Audrey, of when you expect
16 that decision to be finalized?

17 MS. AUDREY LEWIS: Probably we talk
18 to the Water Board. Doug, you would have a
19 better estimate.

20 MS. RYCHLENSKI: Okay.

21 Yes, sir?

22 A VOICE: What you just said, are
23 you saying that the EPA's proposing to
24 monitor the plume from the plume broke --

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1 MR. SINGERMAN: Part of the remedy
2 is to include monitoring of the plume to
3 make sure that it is attenuating. We're
4 just not going to just ignore it and walk
5 away from it. Part of the long-term
6 monitoring is to make sure that natural
7 attenuation is occurring ss part of the
8 remedy.

9 A VOICE: So, does that mean that
10 you're going to be proposing more wells

11 downgradient of the site?

12 MR. SINGERMAN: Well, it depends. I
13 mean, we may be able to use existing wells,
14 we may have to install additional wells.
15 These are some of the decisions we have to
16 make during design, but we basically want to
17 el -- find out what's happens with the plume
18 over some time, so if we need more wells we
19 would install them.

20 A VOICE: That's -- once again, that
21 is one of my big concerns is once this
22 Record of Decision is made and this decision
23 is implemented, what happens if the EPA, god
24 forbid, they fix a hot spot and a hot spot

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1 develops, what happens then? Are the PRPs
2 still responsible for any additional cleanup
3 costs?

4 MR. SINGERMAN: PRPs are responsible
5 for -- for anything at the site, even if we
6 delete the site from the National Priorities
7 List and find contamination after that, so
8 they're always on the hook. That's why it's
9 in their best interest for them to implement
10 a remedy at the site and do it the best
11 possible way, because if they don't do it to
12 our satisfaction, they may have to do it
13 over again. Or EPA may have to go in and
14 spend additional funds.

15 So, the thing is, is that, as I
16 mentioned earlier, the ROD amendments, ESDs,
17 we have mechanisms for changing remedies, if
18 necessary. So, if we find some additional
19 hot spot in the future, you know, if we
20 can't address it under the current ROD, we
21 can perhaps modify the ROD as, you know, as
22 necessary to encompass other contaminant
23 sources or problems we find in the future.

24 MR. GRANGER: And just to add one

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1 more thing to that, you'll notice in the
2 Proposed Plan as one of the bullet items
3 under the preferred alternative, the
4 provision for a five-year review, so that
5 such -- such that the Superfund program
6 requires that the site be reviewed and all
7 the data that's been received reviewed every
8 fire years to ensure that the remedy that's
9 used remains protective.

10 MS. RYCHLENSKI: Larry?

11 MR. LARRY ASHLEY: I'd like to ask
12 some really just basically informational
13 questions I'm sure will be no problem. They
14 mostly surround the 360 cap.

15 MR. GRANGER: I'm sorry?

16 MR. LARRY ASHLEY: The 360 cap over
17 the cool pond.

18 MR. GRANGER: Yes.

19 MR. LARRY ASHLEY: Several questions
20 about it.

21 MR. GRANGER: Okay.

22 MR. LARRY ASHLEY: One: Could you
23 tell us in other terms other than 360 cap
24 what the nature of that barrier is like?

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1 Two: Is it in the end covered with
2 this same sort of cover as is being
3 committed for the other seventeen acres? Is
4 it set aside in some way, is it visually
5 differentiable from the other areas of the
6 site?

7 I gather that the cooling pond gets
8 treated differently because it deserves this
9 cap. And what way does that translate to
10 any difference that you can see once the
11 remediation is completed?

12 And finally, there's language in
13 those bullet items on page 15 that says that
14 the nonhazardous wastes from the cooling
15 pond are going to be removed, compacted and
16 replaced or something for fill, and it
17 struck us as curious, how do you separate
18 the hazardous from the nonhazardous material
19 that's in the cooling pond? I assume that
20 there's hazardous material there.

21 So, that's a battery of questions,

22 basically information questions.

23 MR. GRANGER: Let's break that into
24 two parts. The part about compaction and

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1 consolidation, I'll answer that. The first
2 part about the 360 cap is, yes, it varies
3 dramatically from the site-wide cover. I
4 could try to tackle it, but we have an
5 expert here on 360 caps, so did you want to
6 tell them?

7 MR. DAVID CAMP: Yeah, I mean, a 360
8 cap, basically you would just contour the
9 area a little bit to shape it into the shape
10 you want. And then it's the capping is just
11 impermeable layer first, like something like
12 a plastic, high-density polyethylene liner,
13 or it could be a clay layer, something that
14 meets the permeability requirements of Part
15 360. And then on top of that is -- it's a
16 guess, a couple feet of what they call
17 barrier protection layer, which is just this
18 type soil. And then on top of that you put
19 a topsoil layer. And then you seed it so
20 that the topsoil is stable.

21 And in this case that's basically
22 what we're talking about for a 360 cap.

23 MR. LARRY ASHKEY: The plastic part
24 remains after a couple of decades still

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1 intrical? I mean, it's -

2 MR. DAVID CAMP: Yeah, as long as
3 I -- yeah, it lasts a long time, as long as
4 it's not exposed to sunlight, which it won't
5 be.

6 MR. LARRY ASHLEY: Right. Mark,
7 you're looking up the section I was talking
8 about?

9 MR. GRANGER: Yeah, I'll read it out
10 loud for the record. "Nonhazardous debris
11 that is located on the surface of the areas
12 where the site-wide surface cover would be
13 installed and/or is commingled with the
14 excavated soil would be removed and
15 consolidated onto the former cooling pond."

16 What that's referring to is as we do
17 the excavations, you know, assuming this
18 remedy moves forward, as the excavations
19 would be performed you'd be digging up soils
20 that are contaminated with PCBs and TCA,
21 there's going to be like large boulders,
22 let's say, that in not necessarily PCB- or
23 TCA-related whatsoever, and you could
24 decontaminate it quite simply by rinsing it

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1 off. Or a pipe or a car body, that is
2 something that's not the kind of thing you'd

3 want to send to a hazardous waste landfill
4 in a rolloff or treat in some way.

5 In addition, that's excavated-related
6 materials. Then there's material on top of
7 the site, like bricks and, you know, a pile
8 of fishing wire, you know, from -- you know
9 what I mean? There's, like, a big mass of
10 spaghetti of old fishing line, things of
11 that nature, that's what that's referring to
12 in terms of, okay, we're putting -- we have
13 a landfill, we're going to be capping a
14 landfill, these are the type of materials
15 that are already in the landfill, let's
16 consolidate those materials and focus our
17 attentions on the hazardous materials in
18 terms of treatment and sending off site, and
19 we'll put the cap over the top of the
20 cooling pond and other nonhazardous debris.

21 MR. LARRY ASHLEY: So, that bullet
22 item began with a description of the cooling
23 pond, but actually the materials that are
24 going to go in is from the rest of the site?

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1 MR. GRANGER: Well, what it says is
2 nonhazardous debris that is located on the
3 surface of the areas where the site-wide
4 surface cover would be installed, meaning
5 the seventeen acres on the surface, so you
6 have structural steel, fishing line, et

7 cetera, bricks.

8 MR. LARRY ASHLEY: I don't know if
9 we are talking about the same part. The
10 bullet item that begins a cap -- a cap
11 meeting the requirements --

12 MR. GRANGER: Oh, I'm sorry.

13 MR. SINGERMAN: Prior to the
14 construction of the cap, the consolidated
15 soils --

16 MR. LARRY ASHLEY: Nonhazardous
17 debris --

18 MR. GRANGER: -- debris, and
19 existing fill materials would be regraded
20 and compacted to provide a stable
21 foundation.

22 Okay. That's building on the
23 previous bullet, so what that's saying is
24 that all those materials, and with the

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1 addition of these other materials, would
2 then go through what Dave said in terms of
3 contouring. You have to have, like,
4 specific grades in order to meet the
5 specifications of the State standard,
6 Part 360.

7 MR. LARRY ASHLEY: Okay.

8 MR. GRANGER: When they say
9 compacted, you have to -- in order to
10 maintain that slope you have to send the

11 equivalent of a steam roller over the top
12 and it has to meet -- it's a very technical
13 specification and they have machines that
14 measure compaction. You have to have
15 ninety-nine percent, et cetera.

16 MR. SINGERMAN: It's all so it
17 doesn't start settling too, so the cap
18 doesn't collapse.

19 MS. RYCHLENSKI: Okay. Any more
20 questions or comments?

21 Jamie?

22 MS. JAMIE DAGLER: Yeah. Just
23 wanted to ask a question about the
24 institutional controls. Can you give us an

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1 idea, Mark, of at what point in the process
2 that's going to unfold? Would EPA begin the
3 process of developing those institutional
4 controls with the community?

5 We're assuming that EPA takes the
6 lead in bringing together, if it be City,
7 County, whomever, or the DEC, obviously, to
8 sit down and actually establish what those
9 controls would be. For example, under what
10 conditions could there be excavation on the
11 site?

12 And actually that's a question is
13 would this remedy, if selected, still allow
14 the possibility of excavation on the site as

15 long as the soils underneath the surface
16 cover were treated as hazardous waste, is
17 that --

18 MR. GRANGER: That's how I envision
19 the institutional controls for soils related
20 to the site proceeding.

21 Very briefly, institutional controls
22 could be begun to be instituted concurrently
23 with design of the remedy or after. My
24 experience has been that institutional

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1 controls are usually addressed kind of like
2 as the period on the end of the sentence,
3 where you're done with your remediation or
4 you're done constructing your remedy,
5 assuming that you don't have any thirty-year
6 remedy going on, but in terms of just
7 constructing the remedy, design and
8 construction, and then you move into your
9 institutional controls, fails that could be
10 moved up.

11 But I'm assuming perhaps, Joel, did
12 you have any further insights on that?

13 MR. SINGERMAN: There's really no
14 requirement as to when it has to be done.
15 If you definitely want to have the
16 institutional controls in place before the
17 remedy is basically completed, because at
18 that time, you know, you don't want to have

19 people be able to do something to the
20 covered area or cap that, you know, would
21 adversely impact it, so we probably want to
22 start early enough in the process that by
23 the time the remedial action is completed,
24 that we would have those protections in

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1 place.

2 But there's really no specific time
3 when we're required to start doing it, but,
4 you know, I guess the sooner, the better.

5 MS. JAMIE DAGLER: So, that is the
6 EPA's responsibility, to make sure that
7 these are implemented?

8 MR. SINGERMAN: Well, everything at
9 the site is EPA's responsibility depending
10 if we -- we intend to negotiate with
11 potentially-responsible parties to undertake
12 the remedy, so, you know, certain aspects
13 may ultimately be their responsibility, but
14 ultimately everything is EPA's
15 responsibility.

16 If they do something on behalf of EPA
17 we would want to make sure that it's done as
18 we would do it.

19 MS. RYCHLENSKI: Mark?

20 MR. LARRY ASHLEY: Sorry to jump in
21 again. Once the remediation is complete,
22 will need there be a fence around the

23 property or will it again be open to
24 children who use it quite naturally as means

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1 of cutting down distances to and from their
2 house and school, et cetera, which remains a
3 problem for any fencing that remains in
4 place?

5 As you know, people have used, over
6 the years, that land as a thruway. Does any
7 remediation, absent someone on the site who
8 fences it for purposes of security for
9 whatever is going on there, does the type of
10 cleanup we're talking about here end up with
11 no fence around it or is a fence kept around
12 it sort of perpetually in recognition of the
13 fact that it's a site that needs to be
14 treated carefully?

15 MR. GRANGER: I would say that the
16 basic policy of EPA is to err on the side of
17 conservative, such that any portions of the
18 site that had not been remediated to
19 eliminating health risks would be fenced,
20 would remain fenced.

21 MR. LARRY ASHLEY: But that would
22 not be true for the huge majority of the
23 site, is that right?

24 MR. GRANGER: I would say

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1 ultimately -- let's say that hypothetically
2 half of the site was remediated and had some
3 kind of cover configuration placed over the
4 site, over that portion of the site, that
5 the fence line could then be moved back to
6 the unremediated portion of the site.

7 In addition, I envision that the
8 cooling pond portion of the site will be
9 fenced in perpetuity, typically to protect
10 the integrity of the cover that's done.

11 MR. SINGERMAN: That's currently
12 fenced now.

13 MR. GRANGER: The whole site is
14 fenced now and that fence will stay up as
15 long as there's remediation work going on.

16 MR. SINGERMAN: We have no intention
17 of taking the fence down, though. I -- I
18 mean, basically it's private property, so
19 it's not -- so if the property owner will
20 maintain the fence, then the fence will
21 stay.

22 MR. ERIC DUMOND: I'm going to speak
23 from a little bit of the ignorant side of my
24 education. My understanding is groundwater

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1 rises, it fluctuates, right? It goes up and

2 down. This 360 cap is going to be on top of
3 basically the cooling pond?

4 MR. GRANGER: (Nods head)

5 MR. ERIC DUMOND: Is there any
6 possibility of when the water rises it
7 carrying away any hazardous chemicals when
8 it rises?

9 MR. GRANGER: Eric, that's the total
10 point of this remedy is, first of all, to
11 remove sources of contamination to the
12 aquifer, so that when the groundwater does
13 rise it doesn't carry away these chemicals.

14 There's four areas of the site that
15 are going to be excavated, two of which have
16 a direct impact on groundwater. That's the
17 first thing.

18 The second part is the cap over the
19 cooling pond is one thing, but we did an
20 investigation of the cooling pond and did
21 not find hazardous materials contributing to
22 aquifer contamination.

23 MR. ERIC DUMOND: Okay.

24 MR. GRANGER: So, we're going to be

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1 excavating the materials outside of the
2 cooling pond that have been determined to be
3 a source to the aquifer, we're covering the
4 cooling pond simply because it was a

5 construction and demolition debris landfill
6 and that's what you do with old landfills,
7 not because it's hazardous.

8 MR. ERIC DUMOND: Now, you're quite
9 positive that there are no other -- and I'm,
10 you know, talking to you, we've dealt for a
11 long time, and I, you know, I respect your
12 opinion -- are you quite confident that
13 there are no other possible hot spots on the
14 site?

15 MR. GRANGER: I'm quite confident,
16 yes, I would use that phrase.

17 I think that we have an impressive
18 data set, database for the site. There's
19 just sampling points from one end of the
20 site to the other. The nature of the site
21 is such that it is not out of the question,
22 I think it's remote, but it does remain a
23 possibility. And if a source was determined
24 to be present on the site, then we would

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1 evaluate the need to address that in
2 addition to what else we have.

3 That builds on something that Joel
4 had mentioned earlier, that if information
5 comes to EPA in the future, we do have
6 mechanisms for reopening our decision, for
7 reevaluating our decision and formalizing
8 that in a post Record of Decision document.

9 MS. RYCHLENSKI: Jamie, just let me
10 get this gentleman in front of you.

11 Yes, sir?

12 MR. RICHARD PARKER: I'm Dick Parker
13 with Curb. I've lived at that end of town
14 most of my life, especially since '65.

15 This Perplexity Creek and Owego Creek
16 frequently go wild in the spring. Now, when
17 you're going to cover that area of the
18 cooling pond over there, which I'm really
19 familiar with, you will have the Perplexity
20 Creek to deal with, it goes right through
21 it.

22 And having had -- brought up a
23 granddaughter that I confronted that
24 Perplexity Creek commonly going under the

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1 fence along with her friends. I don't think
2 it's going to get remedied that easily. I
3 just brought her home from LeMoyne this
4 afternoon, so she's not one of your worries
5 anymore.

6 That would be a concern of mine, as
7 to how you're going to get that thing so it
8 doesn't run out of there, out of this
9 creekbed. Some parts of it are underground.

10 MR. GRANGER: Right. The creek is
11 definitely a consideration in remedial
12 design.

13 MR. RICHARD PARKER: Yeah.

14 MR. GRANGER: Absolutely.

15 MR. RICHARD PARKER: That's
16 something you want to keep in your
17 monitoring.

18 MR. GRANGER: You mean just during
19 the construction of the cap or just long
20 term?

21 MR. RICHARD PARKER: They'll tear it
22 apart for you. If that thing wants to run
23 wild up there it goes.

24 MR. GRANGER: We're going to have to

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1 design for that and they're going to put
2 proper surface water drainage around the
3 cap, you know. They might have to beef that
4 up and put riprap or something, you know,
5 different measures to prevent erosion and
6 whatnot, but, yeah, that's definitely
7 something that we're going to have to
8 address.

9 MR. RICHARD PARKER: There will be
10 considerable pressure from underneath there,
11 because you may not be aware of the
12 elevation of the subterranean land, there
13 are two aquifers there, an upper one and a
14 lower one. I don't know if you drove
15 through both of them or not. Did you not?
16 Both of the aquifers?

17 MR. GRANGER: I'm familiar with
18 them.
19 MR. RICHARD PARKER: You were?
20 MR. GRANGER: I'm familiar with the
21 aquifers beneath the Rosen site.
22 MR. RICHARD PARKER: The two of
23 them?
24 MR. GRANGER: Right, exactly.

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1 MR. RICHARD PARKER: The upper and
2 the lower?
3 MR. GRANGER: Yeah.
4 MR. RICHARD PARKER: And I don't
5 know if the lower one puts the pressure on
6 or the upper one.
7 MR. GRANGER: Well, that's one of
8 the reasons that the site-wide cover system
9 is being designed to be permeable, because
10 the groundwater tends to rise so high, I
11 mean, I've been out at the site where you
12 could literally dig to groundwater with a
13 teaspoon, so it really would be
14 counterproductive to put a permeable cover
15 across the site when the groundwater comes
16 up so high, and it could actually compromise
17 the cover system. So, I think the permeable
18 specification is important for the site-wide
19 cover.
20 MR. RICHARD PARKER: I don't think

21 they'll do it, but they were considering
22 putting a bypass highway just above that in
23 Polkville. It had all been surveyed and
24 staked off. I don't think they can get

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1 through there anymore, but they put that
2 water tank up there, they might go around
3 it, and that's a State project from Route 13
4 across Route 11 -- or Route 81.

5 MS. RYCHLENSKI: Okay. Lot of stuff
6 going on out near that site, that's for
7 sure. Thank you.

8 MR. RICHARD PARKER: Been there a
9 long time.

10 MS. RYCHLENSKI: Been here a long
11 time, know it inside out, better than him, I
12 guess.

13 No offense.

14 Jamie?

15 MS. JAMIE DAGLER: Mark, with regard
16 to natural attenuation, if that's the remedy
17 selected for groundwater, would you actually
18 set goals for reduction of contaminants? In
19 other words, I'm trying to project ahead.
20 Say natural attenuation doesn't work, you
21 know, in the long run you need to come back
22 and revisit, at what point will you make
23 that determination that this is not working,
24 we need to go back and figure out why it's

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1 not working?

2 Will you set goals based on the
3 levels of contamination you know are there,
4 they should be reduced to a certain level by
5 a certain time or something like that?

6 MR. GRANGER: There's already goals
7 in terms of State and Federal groundwater
8 standards for drinking waters, so those are
9 ultimately the goals. That's the rods, the
10 yardstick that we're measuring it against.

11 In terms of those goals being met
12 over time, there's the stipulation, which is
13 part of the Superfund program, for a
14 five-year review. Every five years that
15 this site is reviewed to ensure that the
16 remedy remains protective. So, we're saying
17 right now that we believe natural
18 attenuation will meet those drinking water
19 standards within ten years. That's an
20 estimate. If it turns out to be fifteen
21 years, at the second five-year review we
22 would evaluate whether that remedy has
23 remained protective and make a decision
24 based on that.

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1 I would say that in the unlikely

2 instance where the City of Cortland wanted
3 or absolutely had to place their groundwater
4 extraction well for drinking purposes
5 downgradient of the Rosen site, that would
6 be -- that would change the equation
7 dramatically and that would be the kind of
8 scenario where we would say, well, okay,
9 this remedy's no longer protective, you
10 know. If that's the circumstance we'd have
11 to evaluate that, okay?

12 MS. RYCHLENSKI: Okay. Any other
13 questions or comments?

14 (Whereupon there was no verbal
15 response)

16 MS. RYCHLENSKI: Okay, then we'll
17 close for the evening. I thank you all very
18 much. And just remember, written comments,
19 get them to Mark by close of business
20 December 17th. And I'm sure we'll see you
21 soon.

22 (Whereupon the meeting adjourned at
23 8:30 PM)

24 * * * *

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1 STATE OF NEW YORK :

2 COUNTY OF BROOME :

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5 I, MICHELE L. RICE, Shorthand Reporter,
6 do hereby certify that the foregoing is a true and
7 accurate transcription of the proceedings in the Matter
8 of a PUBLIC MEETING, held in Cortland, New York, on the
9 9th day of December, 1997.

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RECORD OF DECISION FACT SHEET
EPA REGION II

Site	
Site name:	Rosen Brothers Scrap Yard Site
Site location:	Cortland, New York
HRS score:	51.35
Listed on the NPL:	3/30/89
EPA Site ID#:	NYD982272734
Record of Decision	
Date signed:	3/23/98
Selected remedy:	Hot spot soil excavation (TCA and PCBs); 3-acre NYSDEC Part 360 cap; 17-acre site wide surface cover; monitored natural attenuation of groundwater.
Capital cost:	\$2.7 million
Construction Completion:	2000

O & M cost: \$60,000
Present-worth cost: \$3.1 million (10 years, 7% disc. rate)

Lead agency Site is PRP lead - EPA is the lead

Primary Contact: Mark Granger, Remedial Project Manager,
(212) 637- 3955

Secondary Contact: Joel Singerman, Chief, Central New York
Remediation Section, (212) 637-4258

Main PRPs: BMC Industries, Inc., Cooper Industries, Inc., Elf
Atochem North America, Inc., Keystone Consolidated
Industries, Inc., Mack Trucks, Inc., Monarch Machine
Tool Co., Motor Transportation Services, Inc., New York
State Electric and Gas Corp., Niagara Mohawk Power
Corp., Overhead Door Corp., Pall Trinity Micro Corp.,
Potter Paint Company, Raymond, Inc., Redding-Hunter,
Inc., Harvey M. Rosen, Wilson Sporting Goods, Inc.

Waste

Waste type: VOCs, SVOCs, PCBs, Inorganics

Waste origin: Hazardous waste; scrap processing; steel
manufacturing

Contaminated medium: Soil and groundwater